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COOPERATIVE MARKETING

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ITS ADVANTAGES AS EXEMPLIFIED IN THE CALIFORNIA FRUIT GROWERS EXCHANGE

BY

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PREFACE

The purpose of this book is to point the way toward a better system of food distribution. The history of the cooperative movement in the citrus industry of California demonstrates by achievement the possibility of improvement over the ordinary plan for getting farm products to market. In the cooperative organizations of the citrus industry marketing machinery has been developed to a degree not even approximated in other agricultural industries. Organization is, in fact, the characteristic feature of the citrus industry, while in other industries it is usually only an insignificant factor.

Without, therefore, attempting to trace the history of the movement, the text analyzes the structure of the cooperative associations of the citrus industry. The ordinary problems that face the cooperative association are reviewed, problems of organization, problems of internal management, problems of relationship to other similar associations. It is hoped that an accurate picture has been drawn of the actual operation of the series of organizations that form the distributing system as a whole. It is also hoped that persons who contemplate organizing a cooperative marketing association can gain from the present analysis a satisfactorily comprehensive view of the difficulties likely to arise, and the manner in which a successful enterprise has met them.

Citrus literature is voluminous, but on the marketing arrangements there are no connected accounts. So the composition of this treatise was attended by all the difficulties of breaking a new trail, and the results are subject to the deficiencies almost certain to appear in the first treatment of any problem. The only work that even remotely resembles the present undertaking is Powell's excellent book, "Cooperation in Agriculture." But the field covered by this book is, as its name implies, far wider, and the treatment is general rather than intensive. However, as Mr. Powell is General Manager of the California Fruit Growers Exchange, he bases many of his generalizations on the conditions found in the citrus industry and takes many of his illustrations from it. Marketing and cooperation receive but scant consideration in Coit's "Citrus Fruits," which is, however, by far the best account that has been published of the industry as a whole.

Though printed accounts of cooperative efforts in the citrus industry are almost lacking, there is a considerable mass of lore connected with the exchange system. This I have tried to absorb by conversation and by observation. For many of the statements made no printed authority can be cited, but many of the assertions in the text are based upon papers, pamphlets and reports prepared by organizations in the citrus industry for their own information and made available on the condition that no direct reference be made to the source from which the information came.

As there is much misunderstanding about the exchange organization, it should be borne in mind that where the word "Exchange" occurs the California Fruit Growers Exchange, a corporation, is signified; where "exchange" is used, reference is to the whole distributing system, composed of local associations, district exchanges and the California Fruit Growers Exchange.

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E. W. Kemmerer of Princeton University, both of whom read the manuscript and were during its preparation constant sources of advice; and to the following gentlemen engaged in the citrus industry: Mr. F. O. Wallschlaeger, Secretary of the Citrus Protective League, who answered queries innumerable and placed the library of the League at the writer's disposal; Mr. P. J. Dreher, Manager of the San Antonio Fruit Exchange, and Mr. D. G. Arbuthnot, Manager of the La Verne Orange Growers Association, for constant courtesy and much necessary information, and particularly to Mr. G. Harold Powell, General Manager of the California Fruit Growers Exchange, whose criticism of the manuscript was invaluable. Finally, to my father, Mr. J. F. Cumberland, whose profound knowledge of the citrus industry has been freely drawn upon, my thanks are rendered. For efficient aid in reading the proof and preparing the index thankful acknowledgments are made to my wife.

W. W. C.

January 2, 1917.

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COOPERATIVE MARKETING

CHAPTER I

FOOD DISTRIBUTION AS A FIELD FOR COOPERATION IN MARKETING

Within the last century there have been numerous attempts to better the condition of toiling humanity by various methods of cooperative production or consumption, and even more numerous have been the dreamers who perceived in cooperation a panacea for all human ills, if only their particular system could be made universal. But the mere fact that most of the concrete attempts to put these beneficent and far reaching theories into practice have met with indifferent success or utter failure may lead some of us to conclude that the underlying principles themselves are unsound. Schemes for phalanxes, ateliers, societies, associations, communities, brotherhoods have at various times been heralded as the remedy for social maladies. Yet the death rate among such proposals has always been high.

However, there is one phase of cooperative organization that has received relatively slight consideration, although theoretically it is more tenable than either cooperative production or cooperative buying and although practically it is proving itself far more workable. This phase is cooperative marketing.

Two of the most vital issues in the United States at the present time are the increasing cost of living and the flow of population toward the cities. The causes of rising prices are fairly obvious: enormous gold production accounting for the general upward tendency, and the failure of the production of food to keep pace with the growth of population explaining why food products have advanced in price even more rapidly than commodities as a whole. Growing scarcity of free land and remorseless exploitation of virgin soil have brought it about that food can be produced in sufficient quantity to meet the ever expanding needs of our population only at increasing costs. The higher prices which the farmer receives for his products have gradually been capitalized and reflected to the value of his land. When the farmer finds that he can sell his land at a high figure he decides to move to town. The other side of the picture is that the farmer's sons now find that buying land is out of the question, and they too move to town.

It follows that if some way can be found to avoid part of the expense of placing products in the hands of consumers progress will be made in solving the problem of the high cost of living and also that of the cityward tendency. Scientific agriculture is making a brilliant attack on inefficient methods of production, sociologists are busy reconnoitring the human aspects of the rural problem, but thus far economists have given but meagre assistance toward overcoming the business difficulties of the farmer. Rural credit is in a condition far from satisfactory; distribution of farm products is haphazard; the cost of the distributive system, if we can dignify it with the name "system," is unnecessarily and indefensibly high.

To be sure, plans are from time to time proposed for reducing the cost of living by facilitating the marketing of food products, but almost without exception these plans are applicable to comparatively unimportant commodities or to limited areas, while the great staples which absorb so large a proportion of the social income are left to find their way to market in the old aimless and expensive fashion. We can hardly expect a ranchman two thousand miles distant from the city which consumes his products to be enthusiastic over the opportunity of hauling his crops to a municipal market. The home hamper plan does not appeal to the man accustomed to shipping in carload lots. Consumers' leagues can hardly exert a profound influence on the cotton or the wheat market but must confine their activities in the main to package goods. Direct selling of most kinds is wasteful and impossible of general adoption.

The need is for a comprehensive system of distribution, based on principles of efficiency, capable of universal application. Such a system must recognize the fact that intermediaries, such as jobbers and retailers, perform a useful function and thus that they will continue to operate. It must recognize, on the other hand, that the payments to these intermediaries must be reduced, that their proportion of the consumer's price must be diminished if producers are to be encouraged to furnish ample supplies to the public at reasonable prices.

If the estimate of the Department of Agriculture is accurate and the farmer gets only about half of the consumer's dollar which is spent for agricultural products, it is indisputable that the public is inflicting an injustice upon itself. It is not getting enough food for a given expenditure of money. Bountiful supplies of high grade food are effectually prevented if the distributive mechanism is so intricate and costly that food products can only be sold at high rates. People cannot afford to buy large quantities of expensive commodities, no matter how beneficial the consumption of these may be; hence, if demand is curtailed by lack of general purchasing power, there will be attendant curtailment of production, prevention of consumption of beneficial products and impairment of social welfare.

One of the most perplexing problems that confront the social reformer is that of insufficient nourishment. Booth and Rowntree in their justly celebrated surveys came to the conclusion that about one-tenth of the industrial population studied does not obtain enough food to secure mere working efficiency.[1] Chapin, More and Streightoff give concretely the income which is necessary under modern conditions for the maintenance of a decent standard of family living.[2]

Most writers, however, see only one remedy, increased earnings. But increased earnings imply a readjustment of the general economic situation which determines wages. This readjustment is not to be obtained by even the widest diffusion of knowledge of the fact that large numbers of people are underfed. Some dynamic element is needed, such as a change in the ratio of numbers to natural resources or an increase in working efficiency. Such general readjustments for the welfare of labor are most difficult of accomplishment. If workmen were able to increase their wages they would do so without waiting to be told that their earnings are inadequate.

Bitter strikes have been waged over smaller matters than an eight per cent. advance in earnings, yet the wage earner would receive an advantage equivalent to an eight per cent. increase in wages if the intricacies of getting his food to him could be sufficiently straightened out to effect a saving of twenty per cent. For it must be remembered that investigators agree that more than two-fifths of the workingman's total earnings is spent for food. Under our present arrangements the retailer is unable to effect this simplification. With heavy overhead charges and a relatively small business he is compelled to make what seems to be an exorbitant profit on every transaction in order to maintain himself. To be sure, he renders services in the form of convenience and individual accommodation which enable him to add one-third to one-half to the prices which he pays the wholesaler;[8] but if these services and that convenience were not demanded by the consuming public he would be unable to make this large addition to wholesale prices. Still, if these services could be integrated and organized in a systematic manner it is easily conceivable that they might be furnished at much smaller costs. With the accomplishment of this economy would come also a vast increase in social welfare without a corresponding social loss. Few men would be thrown out of employment; little capital value would be destroyed, and a limited measure of readjustment would suffice.

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[1] Booth: "Life and Labour of the People in London," Vol. II, pp. 18-24; Rowntree: "Poverty," pp. 111-118.

[2] Chapin: "The Standard of Living Among Workingmen's Families in New York City," pp. 68-69, 123-161, 229-234, 245-250; Streightoff: "The Standard of Living Among the Industrial People of America," Chapters II, IV, and XI; More: "Wage-Earners' Budgets," pp. 264-270.

One large difficulty which the small independent retailer seems unable to overcome is that of handling advantageously perishable products of second and third qualities, those qualities which the vast bulk of our population might reasonably be expected to buy. On first grade qualities the retailer can add a handsome percentage, enough to cover his heavy expenses and large risks of loss through deterioration, and still consumption will not be curtailed appreciably. To the classes that buy "fancy" grades a price of a little more or a little less is a matter of relative indifference. But it is quite otherwise in the case of "standard" grades. The large consuming public which is unable to buy the best grades of commodities refuses to take the lower grades unless the prices are very attractive. The principle is the same as that which governs the prices of second hand articles: no matter if they contain practically as many uses as new articles, they will be taken only at a heavy discount. And it is impossible for the ordinary retailer, catering to a widely fluctuating demand, to quote these inviting prices. So he resigns himself to the policy of a few sales at high profits rather than numerous sales on a narrow margin. As a result many of those who would, to their own great physical improvement, consume enormous quantities of fresh produce of the second and third qualities at present consume very small amounts of fruits and vegetables because of their inability to obtain anything but first grade commodities or lower grades only at relatively high prices.

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[8] King: "Can the Cost of Distributing Food Products be Reduced?" in *Annals of the American Academy of Political and Social Science*, Vol. XLVIII, pp. 199-224.

The effect of this situation is threefold: (1) consumers suffer through the failure to obtain a properly balanced diet; (2) producers suffer through inability to market large portions of their crops, for there are always more small apples than large; (3) society as a whole suffers through the waste of commodities which, under a less expensive distributive system, would have an economic value. There is no market for small apples at four cents a pound, but at one cent a pound the demand would be enormous. Moreover, apples to any amount can be grown for one cent a pound, but under the present system the price is two cents a pound or more by the time the consumer is reached, and in all probability demand is reduced by three-fourths.

It was through observing the fact that peaches on the Los Angeles market were at one time selling at five cents a pound while forty miles distant they were selling in the orchard at $2.50 a ton or 1¼ mills a pound that the present writer became interested in the marketing problem. Developments in the technique of production have obviously outstripped those in methods for getting products into the hands of consumers, just as in political and social life the machinery sometimes seems inadequate for the tasks it is supposed to perform. Thus far no one has come forward with a comprehensive plan for remodelling the marketing machinery, though of course practicable suggestions for improving minor parts are from time to time offered. Indeed it is highly improbable that the mechanism can be completely reconstructed as long as producers prefer a starved individualism to a well fed cooperation between themselves and with marketing agencies, and as long as consumers have an unreasoning terror of such combinations and associations as are essential to efficiency in marketing.

So the problem is more than that of devising proper mechanical methods for the economical distribution of food products. Men as well as things must be made to act in a different manner, and to readjust men's habits is not a trifling undertaking. If the course of civilization for five thousand years has been unable to impress upon men's minds the advantages of working together for the accomplishment of common ends there is little likelihood that the exhortation of any social reformer will bring it about at a moment's notice. Just at this point many otherwise irreproachable schemes break down. They depend for their success upon the contingency that men become rational or loyal or unsuspicious or honest or upon some other hypothetical condition. The "economic man" has fallen, and plans of social amelioration that rest on the presupposition that the individual recognizes and pursues his economic interests to the exclusion of other considerations are destined to remain unrealized.

Until recently American farmers have been unconscious of and unaffected by those socializing forces which have enabled business men so successfully to combine for common undertakings. Business men unite to overcome the larger obstacles which confront them; farmers still try to meet their problems single handed. Business methods make possible the Pennsylvania Railroad and the United States Steel Corporation; the methods of farmers engender inefficiency and stagnation.

Essentials for a successful plan in simplifying the marketing situation are: (1) it must not be based on self-interest alone; (2) it must not expect unduly to alter long established customs; (3) it must be based on principles of efficiency, involving some sort of concerted action on the part of producers.

Cooperative marketing to a large extent is in harmony with these three principles. A properly managed cooperative association can make a powerful appeal to a producer's self-interest. He can be shown that if a large enough proportion of producers consent to work together the possibilities for gain are greater when he unites his efforts with those of others than when he operates independently. In addition he is offered the opportunity of becoming a part of a social organization. This aspect of cooperation is often neglected, but students of society agree that a man inherently desires to belong to some kind of social group, a club, a college, a lodge, a grange or a trade union. He can be made to feel that he is an essential part of something larger than himself. Thus loyalty is engendered, toleration fostered and breadth of view developed.

Neither does cooperative marketing depend for its success on changing the habits of consumers. It recognizes that the ordinary purchaser of food will continue indefinitely to send in an order or go to the corner grocery to procure daily supplies, even though it may be incontrovertibly demonstrated that economies might be effected by joining a housewives' league or patronizing some distant public market. Improvements in retail distribution will undoubtedly be worked out, but they must come through the organized effort of consumers expressing itself through voluntary associations and through political organizations which have as their purpose the assumption by cities of control of the broader aspects of the final stages of food distribution, such as minimum standards of quality, honest weights, adequate and convenient terminal facilities, unmanipulated public auctions and licensed commission merchants.

Business methods for farmers are essential if agricultural producers are to retain their relative position in our broader national economy. Business methods imply specialization of function. The farmer who best understands the technical processes for raising potatoes or wheat may be a poor salesman. His lack of bargaining ability is practically always combined with profound ignorance of the general market situation. All he ordinarily knows about what price to demand for his product is gained from those who are offering to buy. He is innocent of adequate knowledge of what is going on in competing areas of production all over the world. His ideas of the most advantageous times for offering his product are vague. In short, the farmer's marketing perspective is necessarily local, while marketing efficiency requires specialized skill, extensive information and a perspective international in scope.

Business methods also imply the ability to combine with others for attaining desirable ends, impossible of realization by any individual. The farmer by his own efforts is not able to obtain sufficient market information for the intelligent disposal of his crops. Nor could he advantageously use such information even if it were available. But a group of farmers can afford to develop an elaborate market report service and then realize the full benefit from this information by delegating marketing authority to some man or group of men occupied wholly with the selling and not the production of commodities. The selling department can also turn attention to the time element as well as to place distribution, and by delaying or expediting shipments a rational instead of a fortuitous distribution can be effected. Of what value to the ordinary farmer would be the knowledge that better prices could be secured by retarding his sales? He is under compulsion to ship within narrowly circumscribed time limits or allow his crops to deteriorate. An organization, however, can provide an elevator or a warehouse or a cold storage plant and make itself relatively independent of the necessity of immediate marketing. It would be folly for an individual to install such an equipment, but a group can command the credit for the physical plant, the financial stake of any individual is not an oppressive item, and his share of the expense is small, yet the possibility of profits from storing his products for a more favorable market is as great as though he individually possessed storage facilities.

The expression "cooperative marketing" is used in two quite dissimilar significations: (1) It may apply to united activity on the part of producers, usually manufacturers, and distributors, such as retailers, for the sale of a given commodity. Obviously this form of cooperative marketing has nothing to do with cooperation among the producers themselves. It may best be illustrated by the frequent usage of manufacturers of specialties who include the names of local dealers in the advertisements sent out by the factory. (2) The second meaning is that with which we shall be concerned. It signifies the cooperation of individual producers or groups of producers for the marketing of products. Nothing is implied in regard to cooperation between these associated producers and the ordinary agencies of distribution, though such cooperation may exist.

Even in the second sense, however, the term "cooperation" has several meanings. For instance, it sometimes refers to voluntary unincorporated organizations, sometimes to capital stock associations of producers, sometimes to corporations formed under State laws which permit non-profit organizations without capital stock. When the form of association is the ordinary stock corporation it is evident that through the sale of shares ownership in the so-called producers' organization may pass to non-producers whose interest in the corporation rests on expected dividends from stock which they hold rather than from economies in the handling of their crops. Mr. Powell's caution as to the application of the term is therefore pertinent:

> A cooperative organization, therefore, is not a corporation in which the capital is contributed primarily in order that it may earn a profit; nor one composed of producers and non-producers; nor one in which the producer's product is handled by a corporation for the benefit of the stockholders rather than for that of the members; nor one in which the membership is not under the control of the organization; nor one in which the members do not actually control the organization. It is an association of farmers who unite in an effort to handle their common interests through an agency which is controlled by them on the principles of an industrial democracy, and exclusively for their benefit.[4]

The principles on which cooperation among producers for the common marketing of their products is based are few and simple. While a living and developing form of social and economic organization is incapable of being neatly classified and pigeonholed, some attempt must be made toward an enumeration of the salient features of cooperative marketing. However, it must not be inferred that any of the statements to be made apply indiscriminately to all such organizations. Practically no two are exactly alike, and this is proper. Different local conditions are to be met, different products are to be marketed, different types of cooperating individuals are to be combined. A form of organization suitable for marketing wheat might be quite inappropriate for handling strawberries. Some associations deal only with marketing, as such; some add to this function preparation of the product for marketing; some further concern themselves with storage; some even exercise more or less control over the manner in which the crop is produced.

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[4] Powell: "Fundamental Principles of Cooperation in Agriculture"; University of California, College of Agriculture, Circular No. 123, p. 2.

In agricultural cooperative marketing the crop is produced individually but assembled and sold collectively. Proceeds of sales are apportioned according to some specified agreement. Two chief methods obtain for the division of proceeds: (1) The selling department keeps the product of each cooperator separate and sells it on individual account. Or at least the proceeds due any cooperator are calculated on the price obtained for his particular shipment, though shipments by other cooperators may be included in the same sale, if one man's shipment is not large enough to supply the demands of the purchaser. (2) Much more common is the method of pooling the products of the several members and prorating the proceeds. Each plan has advantages and disadvantages.

Another essential of cooperative marketing is that there shall be democratic control. Whether the "one man, one vote" plan should be unqualifiedly adopted is questionable, but there is little likelihood of success unless each member feels a personal, vital interest in the enterprise. To assure this interest it is essential that no individual or small group of individuals because of preponderating importance in the organization should cause it to become a miniature despotism or oligarchy. If any member feels that his influence or power in the association is so insignificant that he is in no way able to affect its general policy he is quite likely to sever his connection with it. Conservatism and "safety first" are principles ingrained in farmers. And the average producer is not going to entrust his means of livelihood to an agency over which he has no control, even if it offers an apparent advantage in the disposition of his crops.

Although a society for marketing may come within the definition of a cooperative organization and still pay dividends on stock, the practice is fraught with danger. Enough promising associations have succumbed to the dividend malady to justify postulation of a non-profit basis as one of the principles of real marketing cooperation.

A point which has received relatively slight consideration in most expositions of cooperation, but which seems of especial importance, is what might be termed "competitive cooperation." There is practical unanimity of conviction among economic thinkers that efficient production requires the spur of self-interest. On this ground the defence of private property is most frequently and most logically based. So far, advocates of socialism and cooperative effort of various forms have failed to convince the majority of thinkers that their schemes offer substitutes, equivalent in motivating force, for private property and competition. Therefore if a cooperative plan can be made to include those features of beneficial competition which are believed so largely to have formed the basis of economic progress it can enlist the adherents of a much wider group of thinkers than would otherwise be the case. Still more important, the history of cooperative enterprises declares in unmistakable terms that the principles of brotherhood do not constitute an adequate ground structure for persistent and effective industrial effort. In fact, at the present stage of social evolution idealistic aspirations for an economic organization based on unalloyed altruism must come under the hegemony of possibly more sordid but unquestionably more powerful self-interest. Cooperative marketing can be made to fulfil this condition, and in that fact lies its inherent strength.

CHAPTER II

ORIGIN, EXTENT AND NATURE OF THE CITRUS INDUSTRY IN CALIFORNIA

Before we can consider cooperative marketing as exemplified in the citrus industry in California, it is necessary to enter into a somewhat elaborate description of the industry itself. The ideas of many people in regard to orange and lemon culture in California are not only vague but to no small extent erroneous.

Statements in regard to the extent of the industry, the cultural processes and the methods of packing and shipping must not be accepted as making a pretense to comprehensiveness. Differences of opinion might conceivably arise from every separate statement concerning growing, packing and shipping, and yet the sum of the statements here given might leave on the whole an accurate idea of the industry as actually conducted. Hence all statements are intended to be merely typical and not exhaustive, for it must be remembered that in each branch of the industry there are almost as many different methods as there are individual growers, packers and shippers. Moreover, conditions are so variable in the different producing areas that a statement which might be true for one locality could be, and often is, entirely inapplicable in another. Further to simplify the situation it must be remembered that all of the points to be presented apply indiscriminately to both oranges and lemons, unless otherwise specified, and that the phrase "citrus industry" as used in California signifies primarily oranges and lemons, for very few pomelos (grapefruit), limes or citrons are produced.

California, throughout the period of her settlement and development by European stocks, has been a land picturesque and romantic. From the voyage of Drake and the days of the Franciscan fathers under Junipero Serra down to the "Forty-niners," her history has been tinged with more than ordinary fascination and romance. As formerly she was known as the land of gold, so now is California almost as broadly known as the land of the golden orange. And the story of the yellow fruit is little less dramatic than that of the yellow metal.

Oranges were first introduced into California by the padres in the latter half of the eighteenth century. Even yet some of the trees from these early plantings can be seen around the ruins of the old missions. Of course, all of the oranges of this early period were of seedling varieties, the seeds having come from Spain by way of Mexico and Lower California.

By 1850, by reason of seeds and trees obtained from the missions, the orange came to be a relatively common garden tree, and besides there had been planted the first commercial orchard, the famous Wolfskill grove, situated on what is now the commercial centre of Los Angeles. By 1875 numerous small plantings at Los Angeles, Pasadena, San Bernardino, Riverside and San Diego had shown that the soil and climate of California were peculiarly suitable for the production of citrus fruits. But these early experiments only showed possibilities. Orange growing on an extensive scale was out of the question for want of a market. For it must be recalled that southern California had no railroad connections until 1876, when the Southern Pacific extended its line from San Francisco to Los Angeles. Thus the industrial era of producing citrus fruits may not unreasonably be dated at 1877, when the first carload of oranges left the Wolfskill grove for the East.[1]

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[1] Coit: "Citrus Fruits," pp. 1-5.

These pioneer experiments with seedling varieties were, however, destined to be thrown into obscurity by the introduction of an infinitely superior seedless variety, now known the world over as the Washington navel. The common orange is probably a native of the south of China, and spread thence to India, Arabia and Syria. Europe first became familiar with it in the fifteenth century. At present there are eighty more or less distinct varieties of oranges, but all of these are derived from the sweet and bitter oranges of China.[2]

Our first description of navel oranges was written in the seventeenth century. But it is not from the navel varieties of Europe that the Washington navel is derived. At an early date in Brazil's history oranges were transplanted thither from Portugal. According to information gathered by an expedition sent to Brazil in 1913 by the United States Department of Agriculture there is a tradition among the Portuguese orange growers of Bahia, Brazil, that about 1820 a bud sport appeared on the seedless variety known locally as the *laranja selecta*. The sport was found to be seedless, of unusual size and of superior quality. A grower at Bahia propagated buds from this sport and developed a variety known locally as the *laranja selecta de umbigo* and internationally as the "Bahia."[3]

In 1869 the attention of William Saunders, superintendent of the propagating gardens at Washington, D. C., was directed to the existence of this superior variety of orange at Bahia. Immediately he sent to Bahia and procured twelve newly budded trees. These he established in the grounds at Washington and set about propagating other trees for distribution by means of buds from the original importation.

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[2] *The Packer:* "The Orange Historically," May 14, 1910.

[3] Shamel: "The Washington Navel Orange," in *Riverside Enterprise*, May 20, 1915.

One of the prospective settlers of the new colony of Riverside, California, was Mrs. L. C. Tibbetts. Before starting West she was inspecting the orangery at Washington, and Mr. Saunders offered to give her two of the Bahia trees to take to her new home. She accepted the offer and planted the first Bahia navel orange trees in California in 1873. From this time a new era opens in California citrus culture. As soon as the trees came into bearing the marked superiority of this fruit over other navel varieties, known indiscriminately as Australian, became evident. There was a great demand for buds from the Tibbetts trees and before long this variety, now known as the Washington navel from the fact that the first trees came to California from Washington, was rapidly supplanting all other varieties. The two original trees are still living and bearing, one having been transplanted to the grounds of the Glenwood Mission Inn at Riverside by President Roosevelt in 1903, and the other to the head of Magnolia Avenue, Riverside, which traverses one of the most famous orange producing districts in the world.[4]

What has been the development from these inconspicuous beginnings that have just been sketched? An adequate conception of the amazingly rapid progress of the industry can only be conveyed by a survey of citrus culture throughout the world:

The citrus fruit crop of the world is equal to 90,000,000 to 100,000,000 boxes of California capacity or from 230,000 to 250,000 carloads of California size. The five most important countries in the order of their production are: the United States, Spain, Italy, Japan and Palestine. The United States and Spain each produce approximately 30 per cent., or 68,000 carloads, Italy 25 per cent., or 58,000 carloads, Japan and Palestine each less than 5 per cent. of the world's production.[8]

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[4] Babcock: "Introduction of the Navel Orange into California," in *University of California Journal of Agriculture*, December, 1914, pp. 130-131; Coit: op. cit., pp. 17-23.

And it is due to California's activity that the United States can take this prominent position among citrus producing countries. At present in California there are almost 200,000 acres of citrus groves, some two-thirds of which are in bearing, the remainder consisting of young trees.

It is impossible to present accurate statistics either of the growth or of the present extent of the citrus industry. Some counties report the number of trees, others the number of acres planted. Since the number of trees to the acre varies somewhat widely it is impossible to give totals for either acreage or trees except as rough approximations. The figures given in the reports of the California State Board of Equalization (1890-1914) were found to be so unreliable that statistics for the earlier period cannot be given. However, there was a steady and rapid growth in the industry, except for the few years of depression during the early '90s. Since 1903 the Citrus Protective League has assembled data from official and private sources and offers figures which, though they are conflicting at certain points, should not convey an erroneous impression of the real situation.[9] (See table on page 20.)

The relative importance of oranges and lemons is concisely stated by Wallschlaeger:

> Of the total acreage 83 per cent. consisted of oranges and 17 per cent. of lemons, 64 per cent. was of bearing age and 36 per cent. was of non-bearing age. Of the bearing acreage 85 per cent. consisted of oranges and 15 per cent.

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[8] Wallschlaeger: "The World's Production and Commerce in Citrus Fruits and Their By-Products," Citrus Protective League of California, *Bulletin No. 11*, Introduction.

[9] Citrus Protective League: *Bulletin No. 11*, pp. 67-68; cf., Citrus Protective League, *Bulletin No. 9*, pp. 7-8.

of lemons, and of the non-bearing acreage 79 per cent. consisted of oranges and 21 per cent. of lemons.[7]

Number of Acres of Orange and Lemon Trees in California, 1903-1915

	Oranges	*Lemons*	*Total*
1903	65,764	17,893	83,657
1904	70,432	14,565	84,997
1905	74,741	13,629	88,370
1906	89,862	15,568	105,430
1907	100,358	16,064	116,422
1908	128,709	19,422	148,131
1909	138,693	21,934	160,627
1910	144,043	24,139	168,182
1911	160,718	33,612	194,330
1912	156,882	32,441	189,323
1913	158,801	32,556	191,357
1914	171,932	36,374	208,306
1915	168,453	36,670	205,123

This shows clearly that of recent years the proportion of lemon plantings as compared with that of oranges has been increasing. Turning now to the location of this producing area, we find that it is widely scattered. Though to many people orange growing and southern California are synonymous, it is a fact that oranges are commercially produced from Imperial Valley to Shasta, which lies some 725 miles to the north, in the same latitude as New York City. In other words, throughout the extent of California's great thermal belt there are locations suitable for raising oranges. However, classified according to contiguity, there are four principal producing areas and several minor areas. By far the most important is that district, forming a horseshoe, which stretches from Santa Ana and Fullerton, through Whittier and the Los Angeles region, thence up the San Gabriel Valley, and terminates in the important district comprising the San Bernardino, Riverside, Redlands and Colton regions. In this group, composed of

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[7] Citrus Protective League: *Bulletin No. 11*, p. 67.

Orange, Los Angeles, San Bernardino and Riverside counties, is situated 68 per cent. of the citrus acreage. Next in importance is the area lying in the lower foot hills of the eastern side of the southern end of the San Joaquin Valley. Centring at Porterville and Lindsay in Tulare county and extending south into Kern and north into Fresno county is a district including 24 per cent. of the citrus area. Of minor significance as compared with the two former areas are that having San Diego as its commercial centre and that located in Ventura and Santa Barbara counties.

Another classification would divide the producing area into the coastal and the inland districts. San Diego, Orange, Los Angeles, Ventura and Santa Barbara counties fall within the coastal division. Here an unusually equable climate obtains, with warm winters and cool summers. The prevailing winds are from the Pacific, hence the air is far more moist than is the case in the interior valleys. Differences in temperature between day and night, while marked throughout California, are relatively less than farther inland. This division produces the bulk of the lemons and Valencia Late oranges. While for the industry as a whole lemons represent only about 15 per cent., in some of the coastal counties, such as San Diego, Ventura and Santa Barbara, there are twice as many acres in lemons as in oranges, and even in Los Angeles county lemons constitute 23 per cent. of the total citrus acreage.

Marked differences occur in the interior valleys, where lie Riverside, San Bernardino and Tulare counties. Summers are hotter and winters colder than along the coast. Dry air and abundant sunshine are the rule. These conditions seem to be ideally suited to the needs of the Washington navel orange. The fruit is highly colored, of fine texture, and ripens from four to six weeks earlier than fruit grown under the influence of the ocean breezes. In contrast with some of the important lemon counties mentioned above, 98 per cent. of the citrus area of Tulare county must be credited to oranges, and most of these are navels.

The principal citrus counties in order of importance, together with the acreage in 1913, are:[8]

County	*Acres Oranges*	*Acres Lemons*	*Total Acres*
Los Angeles	37,075	13,379	48,454
San Bernardino	38,596	4,198	42,794
Tulare	40,200	950	41,150
Riverside	19,657	4,674	24,331
Orange	12,393	3,165	15,558
Ventura	2,740	4,580	7,320
San Diego	680	1,672	2,352

By consideration of these figures it appears that the impression that oranges and lemons can be grown promiscuously in almost any section of southern California is incorrect. The essential conditions are many and rigid: the soil must be suitable, the area must not be subject to frost or heavy winds, proper drainage must be secured, adequate and permanent sources of water supply must be developed. The result is that within the vast area of southern California, almost as large as the state of Illinois, only 140,000 acres is devoted to citrus fruit culture. As has been intimated this producing area, is widely scattered, and for the most part is confined to the protected valleys of the foothill regions, though some important plantations are found elsewhere.

Citrus growing in Florida has expanded tremendously in recent years, the greatest growth appearing in the production of pomelos. Since the Census gives figures for the number of citrus trees in both California and Florida it is possible to compare the importance of these two sections to the industry as a whole. For 1910 the figures are:[8]

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[8] Citrus Protective League: *Bulletin No. 11*, p. 67.

	California	*Florida*
Citrus Trees	10,102,868	5,244,552
Boxes (1909)	17,318,497	5,974,135
Value (1909)	$16,075,444	$5,495,863

Other States take such an inconspicuous part in citrus growing that they may be ignored for practical purposes. However, Arizona, Louisiana and Texas are rapidly extending production, and may sometime develop into real competitors with the two great citrus States. Comparing California and Florida, it appears that California supports twice as many trees and produces three times as many boxes of fruit as Florida. A more rapid growth, however, is taking place in Florida than in California. It appears that in 1910 California was responsible for somewhat more than 73 per cent. of our national production of citrus fruits, though this percentage has probably not been maintained.

The value of citrus groves, affected by the infinite variations in soil quality, location, water rights and condition of the orchard, ranges from $500 up to $4,000 an acre. In southern California, before the disastrous frost of 1913, very little first class property in full bearing sold for less than $1,800 to $2,000 an acre, while in the Tulare region prices for desirable groves fluctuated widely around the $1,200 and $1,500 level. Since that date there have been so few sales that it is difficult to form an idea of prices, yet they are unquestionably lower by a large percentage than the former level.

According to data collected by the Citrus Protective League and the California Fruit Growers Exchange, there are some 12,000 to 15,000 growers of citrus fruits in California, employing 25,000 laborers. Directly or indirectly

[8] Thirteenth Census: Vol. V, p. 718.

the industry affords a livelihood for about 150,000 people. Since the citrus area amounts to 190,000 acres it follows that the average ranch contains from thirteen to fifteen acres. There are a few groves, often owned by corporations, that contain 500 acres or more, but in general it may be said that a man owning thirty acres is regarded as a large grower. By far the most common unit is that of five or ten acres. These figures seem insignificant to one familiar with the size of the ordinary farm in the United States, but it must be remembered that on a value basis even a five acre orange grove at $2,000 an acre compares very favorably with the ordinary middle Western farm.

Growing citrus fruits is, then, distinctly a capitalistic enterprise. While it is true that plenty of orange and lemon properties can be obtained for a few hundred dollars an acre, the chances are strong that there is something fundamentally wrong with such property. To purchase enough desirable property for a satisfactory citrus enterprise there are required a good many thousands of dollars, so it cannot be thought of as an industry that offers many attractions to the poor man.

These facts suggest the type of owner that we may reasonably expect. Almost always he is a man with the outward marks of comfortable prosperity, and frequently he is a man of wealth. The industry has been sufficiently attractive and profitable to induce many business and professional men to join the ranks of the orchardists. It is asserted, and not only by Californians, with some degree of reasonableness that the average California orange grower is the most intelligent farmer in the world. In fact, the industry presents problems so numerous and so complicated that a high grade of intelligence is imperatively essential to success as an owner, and even the orchard laborer needs to be a man of some education and considerable judgment.

The children throughout the citrus belt, with very few exceptions, receive a high school education, and the percentage of college students is large.

Corresponding with the fact that citrus growing is conducted on business principles much more than most farming we find that the whole life and arrangements of the orange grower resemble those of the business man much more than they do the accepted picture of farm life. Ordinarily the citrus grower produces nothing but citrus fruits. He must buy hay and grain for his horses, vegetables, fruit and meat for his table. Frequently he has to buy his milk, butter and eggs. The baker's wagon and laundry wagon are familiar sights in the citrus area, while they would be strange sights indeed in a large part of our agricultural territory. Homes among the orange groves average considerably better in respect to comfort and convenience than those on United States farms as a whole. In fact, it is far from uncommon for a business man of the cities to own an orange ranch primarily as a home site rather than as a commercial enterprise. Many homes are not only comfortable but pretentious, and are supplied with all of the modern urban conveniences. Since the average citrus holding is only about fifteen acres, "farm loneliness," which Professor Carver has pronounced one of the most difficult rural problems, is in large measure non-existent. Moreover, the magnificent system of California boulevards, combined with the fact that a large percentage of growers own automobiles, gives easy access to the cities with their advantages. Few groves are more than five miles distant from some kind of town.

Finally, the orchardist is accessible to the superb grade and high school system of which California is justly proud. By no means to be neglected in an enumeration of the motives which lead high grade men to enter orange growing is the possibility of a peculiarly clean, independent and interesting form of outdoor life amid comfortable, beautiful and healthful natural surroundings among people whose watchwords are cooperation and progressiveness.

With this general description of the California orange or lemon ranch, we are in a position to proceed to an examination of the rather technical processes involved in the care of the grove and preparation of the fruit for marketing. Such a survey is necessary, for it is this very intricacy and specialization which have caused and which maintain the system of cooperation which is our primary interest. Without difficult problems, localized within a comparatively small area, it is exceedingly doubtful whether the present marketing methods could have been developed. From the fact that citrus growing is a peculiarly skilled occupation tenancy has not developed to any extent in the orange area as it has in so many other branches of agriculture. Owners sometimes live away from their ranches and exercise control through managers, but leasing or the share system is practically unknown.

First and most important for most agricultural undertakings is the quality of the soil. In citrus growing, however, there are many far more important considerations. While a deep loamy soil is to be preferred, orchards are successfully grown on soils that appear to be almost pure sand and on heavy adobe and clay soils. "Hardpan" is to be avoided, and in general groves on heavy soils require the most careful and skilful culture. But California soils are so variable, all kinds appearing within the same district or even within the same grove, that no hard and fast lines can be drawn, and if other conditions are favorable, the soil will usually be found to be satisfactory.

Among the most important cultural processes is irrigation, for upon this the very life of the industry depends.

As no rain is expected between May 1 and November 1, it is necessary to supply the trees with moisture by artificial methods. One common practice is to apply the water once a month during the dry season, but the amount applied and the manner in which the operation is carried on vary according to the soil, the slope of the land and the success of cultural methods employed for conserving the moisture. The most usual way to irrigate an orchard is to make furrows between the rows of trees, and then turn into the furrows a constant stream of such a size that it will practically all be absorbed by the time it reaches the lower end of the row. An even distribution of water to each tree for the same number of hours is the ideal, and a skilled irrigator can estimate and regulate these streams with amazing accuracy. Each furrow is numbered, and the irrigator from the lower end of the row inspects the furrows and notes on a card the condition of each. Good irrigators work much harder with their heads and their pencils than with their shovels. According to the composition of the soil the number of furrows between two rows of trees varies from one to eight and the time that the water is allowed to run in each furrow varies from four or five hours to two or three days.

Irrigating water is ordinarily supplied through concrete pipes with automatic turn-outs or through flumes, either concrete or wooden, laid along the highest side of the grove. Lack of water for irrigation is one of the most effective checks to an extension of the producing area, and it is the height of folly to plant a grove without being reasonably sure that water can be developed on the land or delivered to the land from more remote sources. Differences in the cost of water for irrigation purposes are among the most important causes of differences in cost of production in various districts. Water may be obtained from bored wells by the use of force pumps, or from mountain streams, c from storage reservoirs built to impound storm waters fro the winter rains. The first method is very expensive, th second costs almost nothing, the third may be advanta geous or prohibitively expensive according to local con ditions. The problems of water supply and irrigation ar among the most stubborn which the grower is called upo to face, and without question drastic measures must b taken for the conservation of water if the citrus industr is to retain its prosperity.

Next to irrigation, cultivation occupies the most im portant position in the care of a grove. The purpose c cultivation is primarily conservation of moisture, henc tillage is intensive from about March to November. B means of specially designed chisel cultivators or by dis harrows the soil is frequently turned or loosened so that crust is never allowed to form. In common with all dr farming practice, a dust mulch is formed to a depth c several inches which effectually prevents evaporation. Thi loose soil also facilitates irrigation by making it possibl for the water to be more readily absorbed.

During the fall a cover crop is usually drilled betwee the citrus rows. Vetch, melilotus, field peas, bur clover an barley are the most popular cover crops, vetch and melilotu being much the most widely preferred. This cover cro which is plowed under toward the end of the rainy seaso serves several purposes: it supplies the soil with nitroge (if a legume) and also furnishes humus, in which the sem arid and arid soils of the West are especially deficient; helps to hold the rainfall on the land, and prevents gullyin by the winter rains; it tends to check certain fungous di eases, like the brown rot of the lemon.

Just as is the case with other fruit growing industrie the fertilization of citrus groves has not been reduced to a exact science. Each grower has his own ideas on the subject, and they rarely coincide with the views of other growers. Commercial fertilizer is extensively used; in fact, with the exception of citrus plantations in Florida it is applied more heavily than in any other fruit raising industry. Applications are made twice a year, in the fall and spring. One widely followed practice is to give each tree as many pounds of fertilizer annually as the number of years during which the tree has been planted. Thus a twelve year old tree would receive twelve pounds of fertilizer. But the condition of the trees and the character of the soil in different groves are so varied that no general rule of fertilization can be stated. The three essentials of suitable fertilizer for citrus trees are nitrogen, phosphoric acid and potash, but the proper quantities of each of these elements to apply in order to secure maximum results can be determined only by prolonged and careful experimentation on each grove. Where available, large quantities of barnyard manure are also used, partly for the sake of the chemical elements mentioned above, partly to add humus to the soil. It is applied more or less throughout the entire course of the year.

Citrus growers probably have more enemies to overcome than any other type of farmer. They must wage incessant warfare against insects and fungous pests, guard against various kinds of mechanical injury to the trees and fruit, and strive to minimize troubles attributable directly to natural phenomena, such as sunburn, frost, premature dropping, dropping caused by wind, splitting, puffing, or, with Valencias, turning green after once having become yellow. All of these vexations are receiving constant study by individual growers, by the United States Department of Agriculture and by the Citrus Experiment Station of the State University. Some of the problems are well in hand, others have not yet been solved, but all of these categories of difficulties each year cause losses to the growers that mount up into large figures.

Perhaps a true conception of the growers' difficulties can most vividly be presented by enumerating one only of the foregoing categories of troubles, namely, the insect pests. According to Professor Essig, the orange is host to the following insects, truly a formidable array:[10]

angular winged katydid
aspidistra scale
Baker's mealy bug
barnacle scale
bean thrips
black citrus plant louse
black parlatoria
black scale
blue sharpshooter
branch and twig borer
bur clover or cowpea aphis
California katydid
California parsley caterpillar
chaff scale
citrus mealy bug
citrus red spider
citrus white fly
common termite
cottony cushion or fluted scale
cottony maple or vine scale
destructive eledoes
euonymus scale
Florida red scale
Florida wax scale
frosted scale
Fuller's rose beetle
Glover's scale
Gray's citrus scale
green citrus plant louse
green peach aphis
greenhouse orthezia
greenhouse thrips
Harlequin cabbage bug
hemispherical scale
ivy or oleander scale
Japanese or Mexican wax scale
large vagrant grasshopper
lesser shot hole borer
long tailed mealy bug
melon aphis
Mexican katydid
minute false chinch bug
omnivorous looper
orange chionaspis
orange peel miner
orange tortrix
pernicious or San Jose scale
purple scale
Putnam's scale
red scale
rust mite
soft brown scale
spotted root fly
tobacco flea-beetle
two spotted mite
variegated cup worm
Western twelve spotted cucumber beetle
Western twig borer
wheat thrips
yellow scale

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[10] Essig: "Injurious and Beneficial Insects of California," pp. lvi-lvii.

Scale insects of assorted varieties probably give the most trouble, and the principal mode of procedure against them is fumigation with hydrocyanic acid gas. This fumigation is required once a year or once in two years, and is done in the fall and early winter. Fumigation is carried on at night to keep from scorching the foliage, and the method is as follows: A heavy canvas is thrown completely over and around the tree, and is allowed to extend to the ground on all sides. A receptacle containing a mixture of sulphuric acid, sodium or potassium cyanide and water, varying in amount according to the size of the tree, is then inserted underneath the canvas, thus exposing the insects to the poisonous fumes for half an hour or longer. At the end of this time the "tents" are removed to other trees. Another method of proceeding against scale insects is by a distillate spray, but this is not practiced as commonly as it was in former years. Red spiders are controlled by sulphuring the trees.

Pruning is an important aspect of orange and lemon culture, but one about which it is difficult to lay down general statements. Common practice varies from no pruning at all to almost constant pruning. In general, orange trees are pruned much less than lemons. With oranges the main ideas are to keep down the sucker growth and open the tree here and there to the air so that new fruiting brush will be stimulated. On the other hand the lemon is such a vigorous grower that drastic cutting is necessary to remove sucker growth and also to keep the tree from becoming so large that it cannot be economically picked or fumigated. Fruit of the highest quality is produced on the interior branches so pruners keep this point in mind in the case of both oranges and lemons. Citrus trees sometimes have a tendency to bear heavier loads than their branches will support, so pruners aim at making the framework of the tree stocky and sturdy.

A very important problem, but one which has not yet been satisfactorily solved, is the prevention of loss by frost. A citrus grove can stand very little cold, and any temperature lower than 27 or 28 degrees, Fahrenheit, continuing for some time, ruins the fruit. If the thermometer falls to 24 degrees or lower for any length of time the trees are more or less seriously damaged. The importance of frost protection was forcefully brought home to the growers during the season of 1912-13 by a frost which destroyed millions of dollars worth of fruit and caused injury to the orchards which it is difficult to estimate. However, this frost was the first ruinous one that occurred in the history of the California citrus industry.

Many methods of artificially raising the temperature in groves are in vogue. Irrigation water is sometimes run in the furrows in order to take advantage of the latent heat stored in the water. More common are various firing devices. Wet straw is at times burned at different places in the grove so that the smoke may form a cloud and shield frozen fruit from the direct rays of the morning sun, and thus prolong the thawing process, for much more damage is done by rapid thawing than by freezing. Most common is the liberation of artificial heat to keep the fruit from freezing. Baskets of coal or briquets have been used for this purpose, but now the almost universal fuel is petroleum in some form, crude oil or slop distillate. This is fired in some kind of oil heater, of which there are numerous makes. Some groves even have an elaborate oil reservoir system with oil pipes down every row and heaters controlled from a central point. A good heating system can raise the temperature six to ten degrees. This is practically always enough to prevent frost injury, but for reasons which will be stated later the present widespread use of devices for frost protection is likely to decline.

It is difficult to impress those who are not familiar with the intricacies of orange and lemon growing with the importance of individual skill on the part of the owner or manager. There is such a multitude of factors entering into successful growing that a practical scientific and business education is almost a necessity in addition to the ordinary intelligence that the common farmer must have. It has been stated that conditions often vary widely in the same grove, even though it be but five or ten acres in extent. Hence it follows that no general rules for cultural procedure can be laid down, and it is incumbent upon the owner or manager to apply different processes to different conditions. To such a degree is this true that some of the most progressive growers take the individual tree and not the grove as a whole as a unit, and adjust care to the requirements of the individual tree. A performance card is made for each tree on which is entered for each year the amount and quality of its fruit, how the tree responds to fertilization, what diseases it has, etc. Then if any tree is not measuring up to requirements it can be budded over from stocks that have proved their productiveness. As there are only from seventy-five to ninety trees to the acre, each one is far too valuable to be neglected. In the summer the grower must be on the alert to see that each tree has sufficient moisture; in the winter he must keep a watchful eye on the thermometer, and at all times he must be sure that the fertility of the soil is not being depleted, that insect pests or fungous diseases are not spreading, and that the pruning is being properly done. Each of these operations is so delicate and exacting that poor judgment or neglect at a critical time may mean the difference between profit and loss. It is almost an impossibility for an uneducated man to become a first class grower.

Let us now assume that the crop has been grown according to the foregoing principles, and is ready for picking. The season for Washington navels begins in the San Joaquin Valley about the middle of November, and in southern California it begins some four or five weeks later. From that time oranges are picked from the same tree until about the beginning of June. The season for Valencia Late oranges opens in May, and picking continues through October. Consequently oranges are being harvested during practically all of the year. In southern California February, March, April and May constitute the rush season for oranges, but in the Tulare region more than nine-tenths of the crop has as a rule been shipped before January.

Times of shipment in a typical year are shown statistically as follows:[11]

SHIPMENTS OF ORANGES AND LEMONS FROM CALIFORNIA, BY MONTHS, 1911

	Southern California		*Central California*	
	Oranges	*Lemons*	*Oranges*	*Lemons*
January	10.0	5.5	.3	10.0
February	13.8	6.0	.1	10.0
March	17.8	8.6	1.9	4.2
April	16.3	12.3	1.3	.0
May	16.3	14.9	3.5	.8
June	9.5	17.4	.6	.0
July	5.2	10.5	.0	.0
August	3.0	5.2	.0	.0
September	2.0	4.2	.0	.0
October	1.7	4.5	.1	18.3
November	.3	6.7	40.0	44.2
December	4.1	4.2	52.2	12.5
	100.0	100.0	100.0	100.0

Note: Percentages computed on the total southern California and total central California shipments. Shipments of oranges from central California constituted 9.1 per cent. of shipments for the State as a whole. Central California lemons formed 1.7 per cent. of the total crop.

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[11] Citrus Protective League: *Bulletin No. 11*, p. 71.

But lemons are picked off the same tree every month in the year, and at any time it should be possible to find on a thrifty tree blossoms, small lemons and mature fruit. With lemons, the aim is to secure as large a percentage as possible of summer fruit which commands the best prices. This is the chief reason why central California is not likely to become a great lemon producing area, for, just as with oranges, the lemons there ripen chiefly in the winter months. On the other hand, June sees the heaviest shipments from southern California.

In the case of oranges, ordinarily two or three pickings are made from the same tree, the two methods practiced being "picking to size" and picking in zones. The first phrase means that the larger and more mature fruit is picked first, thus giving the smaller a better chance to develop. The second term describes that method in which all the fruit in a specified zone around each tree is picked at one time. It is a common practice to pick the fruit that hangs near the ground or at the extremities of limbs as early as possible in order to protect it from certain fungous diseases and from injury by the wind or tillage implements, also to prevent breakage of limbs as the fruit increases in weight. With lemons, size is the sole object, and they are picked, whether yellow or not, if they will not pass through a ring of a certain diameter. In fact, it is highly desirable to pick lemons while green in color and allow them to color during the curing process at the packing house.

More and more the picking itself is done by a gang of skilled pickers under the direction of the packing house. In this work the Japanese and Mexicans take a very prominent part. The fruit is severed from the branch by means of specially adapted shears or clippers, and the utmost precaution must be exercised not to break the skin with clipper or with finger nail. Neither must long stems be left on the clipped fruit, as these would puncture other fruit in the same box. As Powell proved by a careful study,[12] any abrasion of the skin invites attacks by different kinds of fungi, and probably the abraded fruit will never reach the market. Immense losses used to be ascribable to careless handling, and now the constant injunction both in the field and packing house is to "handle the fruit like eggs." As the fruit is severed it is placed in a canvas picking sack which is slung from the shoulder. From the picking sack it is transferred to the picking or lug boxes, and in these it is conveyed to the packing house on well sprung trucks which minimize bruises from jarring. Heavy canvases protect the fruit from the sun on the journey from grove to packing house, the journey in few cases being longer than four miles.

At the packing house, which is alongside a railroad, the more detailed work of preparing the fruit for shipment is begun. It is only necessary to give a very general description of this stage. After being received the fruit is brushed or washed according to its condition, and is then graded by hand into "fancy," "choice" and "standard" grades. There are many other grading classifications, but this is representative. Grading is based on form, weight, texture and color, but, with the exception of the extremely large and extremely small fruits, it is not based on size. When graded, the fruit is automatically weighed and sized and is then ready to be packed unless further complications enter. Some oranges and lemons are treated to a process called "sweating" in order to bring out the color. This is done by placing the fruit in the "sweat room" and subjecting it to a constant temperature of 95 to 100 degrees for a few days. Lemons color naturally in the process known as "curing" if sufficient time is allowed, but if it is desired to rush them to the market they are sweated. The fruit is then wrapped by hand in tissue and packed according to grade and size in the packing boxes that can be seen at any time in front of the fruit and grocery stores. An up to date packing house presents an interesting and complicated spectacle. It is provided with expensive and elaborate power machinery and in efficiency could well compare with a modern factory.

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[12] Powell: "The Decay of Oranges While in Transit from California," U. S. Department of Agriculture, Bureau of Plant Industry, *Bulletin No. 123.*

From the foregoing description it is evident that the citrus industry is far more complex than most other agricultural enterprises. It is therefore to be expected that the cost by the acre of producing oranges or lemons will far exceed those for most other crops. The Citrus Protective League has collected a mass of data relating to costs of producing both oranges and lemons. These investigations followed scientifically constructed schedules and covered a wide territory, and the results are by far the most trustworthy obtainable. Cultural costs of materials and labor for the production of oranges and of lemons were collected by the League in 1910.

In examination of the following table, adapted from the League's findings for oranges, it must be remembered that each item of cost does not appear in the expense account of every ranch. For example, if fumigation appears, spraying will very likely be absent, etc. Therefore, adding the column of average costs would by no means represent the average total acre cost of producing oranges. Since, as a rule, only the best growers keep accurate and detailed cost accounts, and since the best growers are usually those who have adopted the most intensive systems of culture, it is probable that the following figures on cost represent a somewhat higher level than would be true for the industry as a whole. The figures do not include depreciation on the groves, buildings, stock, machinery, tools, irrigation plant or other equipment, nor do they include interest on the investment, an important point owing to the high prices of citrus property. A further item for which no allowance has been made is superintendence and administration, unless this has actually been paid for in money. The importance of skilled management has been dwelt upon, and a considerable addition to cost is legitimate as the owner is ordinarily the manager.

ANNUAL COST OF PRODUCING ORANGES IN CALIFORNIA IN DOLLARS AN ACRE, 1910

Cultural cost of materials	*Low*	*Average*	*High*
Chemical fertilizer	$ 13.10	$ 38.71	$ 58.83
Barnyard manure	6.25	21.74	40.77
Water	5.72	15.30	31.45
Fumigation	4.25	12.00	18.35
Forage and grain	8.14	12.66	23.30
Taxes	6.84	12.56	20.56
Maintenance and repairs	3.57	8.97	18.60
Insurance	.30	1.07	2.50
Frost protection	1.67	2.22	3.62
Incidental	1.50	2.75	4.35
Total materials	51.45	83.24	148.56
Cultural cost of labor			
Cultivating	9.32	20.00	33.58
Pruning	4.04	9.50	19.08
Irrigating	3.33	7.49	19.39
Fumigating labor	3.71	6.50	8.44
Spraying	2.00	6.25	12.14
Spreading fertilizer	.71	2.12	8.00
Other tree care	1.56	4.11	11.07
Superintendence	5.00	13.63	27.33
Administration	5.24	10.75	32.73
Total labor	37.86	52.82	80.57
Total materials and labor	*89.08*	*136.06*	*202.35*

Thus the total average cultural cost for materials is $83.24, for labor $52.82, and the entire cultural cost an acre $136.06. At the present time the item of frost protection would unquestionably have to be increased several fold to correspond with the facts, as the use of devices for frost protection has tremendously increased since this investigation was made.

Lemons cost considerably more to produce, averaging $197.15 an acre, distributed $108.71 to materials and $92.51 to labor.[18] Other costs in the processes of putting citrus fruits before the consumer are, by the box:

	Oranges	*Lemons*
Picking	$ .077	$ .253
Hauling	.028	.039
Packing	.324	.596
Freight	.828	.840
Refrigeration	.079	.026
Selling	.070	.070
Total	$1.406	$1.824

On account of these heavy costs of producing citrus fruits and placing them on the market a large yield is necessary if the investment is to be profitable. An average of the five year period 1906-07 to 1910-11 shows a yield of 157.6 packed boxes to the acre for oranges, and 196.2 boxes for lemons. Thus the cultural cost for oranges is $.863 a box and for lemons practically $1, and the total cost of oranges when sold to the first distributor is $2.27 or, estimating 150 oranges to the box, is $.181 a dozen. For lemons the total cost on the market is $2.82, or, estimating 300 lemons to the box, is $.10¼ a dozen. If these figures are accurate, any boxes of oranges or lemons that sell for less than $2.27 or $2.82 respectively entail an actual pecuniary loss on the California grower, in addition to returning no interest on his investment.

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[18] Citrus Protective League: *Bulletin No. 9*, pp. 43-47. There is an apparent discrepancy in the cost of producing lemons, the sum of $108.71 and $92.51 being $201.22. However, $197.15 is the figure given by the League.

Let us now assume that the fruit is packed, loaded on the car, and ready to start for market. The period between packing house and breakfast table is one of peculiar interest. So, keeping in mind the earlier history of the fruit and the kind of men by whom it is grown as affording clues about what to expect in marketing policy, we may now consider in some detail the methods of marketing.

CHAPTER III

BEGINNINGS OF COOPERATIVE MARKETING AMONG CITRUS FRUIT GROWERS

The citrus industry of California is undoubtedly the most highly organized of all agricultural pursuits. Not less than four-fifths of all the citrus fruit of California is sold through cooperative as distinguished from individual effort, and the influence of cooperation on the production of the crop is far from insignificant. What, then, has led to the development of these cooperative enterprises, from what were they trying to escape, how are they organized, and what have they accomplished?

Answers to these questions must take us back to the early years of the industry. As has already been stated, the first carload of oranges left California in 1877, and the industry increased so rapidly that in ten years the shipments had passed the 2,000 car mark.

At first, owing to the comparatively small output, returns were satisfactory, but with increasing production the marketing problem became ever more discouraging. As early as 1885 conditions had become so trying that a meeting of growers was held which resulted in the formation of the Orange Growers' Protective Union. This is perhaps the earliest attempt of the citrus men toward concerted action, but as the organization did not result in anything of permanent significance it does not need to be described in detail. It is, however, important to discover why a need was felt for any organization at all.

What, therefore, were the methods of marketing in vogue

SHIPMENTS OF CITRUS FRUITS FROM CALIFORNIA IN CARLOADS, 1886-87 to 1915-16[1]

	Oranges	*Lemons*	*Total*
1886-7	2,200	12	2,212
1887-8	2,500	20	2,520
1888-9	2,782	26	2,808
1889-90	3,476	34	3,510
1890-1	4,016	40	4,056
1891-2	4,400	52	4,452
1892-3	5,871	65	5,936
1893-4	5,726	145	5,871
1894-5	4,687	335	5,022
1895-6	7,010	565	7,575
1896-7	5,972	1,378	7,350
1897-8	13,987	1,166	15,153
1898-9	9,448	903	10,351
1899-1900	16,362	1,447	17,809
1900-1	21,173	2,924	24,097
1901-2	17,571	2,816	20,387
1902-3	21,080	2,649	23,729
1903-4	26,684	2,782	29,466
1904-5	27,342	4,274	31,616
1905-6	23,739	3,789	27,528
1906-7	26,319	3,507	29,826
1907-8	27,688	4,959	32,647
1908-9	34,376	6,196	40,572
1909-10	28,252	4,891	33,143
1910-1	39,508	6,891	46,399
1911-2	34,557	6,133	40,680
1912-3	16,027	2,304	18,331
1913-4	45,306*	3,032*	48,338*
1914-5	39,744*	7,068*	46,812*
1915-6	37,229*	7,244*	44,473*

*Figures from Citrus Protective League.

Note: The standard car of oranges contains 384 boxes, that of lemons, 312 boxes; but orange cars have varied from 374 to 512 boxes, and lemon cars from 310 to 376 boxes.

before the cooperative era? They were simply those ordinarily employed in the sale of farm products. Either the crop was sold to buyers or it was sold by commission merchants. The plan of selling a crop outright to a buyer who offers a lump sum or a given price a pound or a bushel and of shifting to him the burden and risk of superintending the succeeding stages of the journey to the consumer may be satisfactory when the crop is a staple, whose price is quoted from day to day and is therefore a matter of common knowledge; or when it is a product which can be stored without deterioration, and which commands practically the same price in all markets after the necessary allowance has been made for transportation.

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[1] California State Board of Agriculture: Report for 1913, p. 135.

But citrus fruits were then an agricultural specialty; methods of refrigeration were so ineffective that immediate consumption was imperative; prices fluctuated enormously from day to day and from market to market according to weather conditions and the supply of fruit available. When a car was billed to a certain market, there was no machinery for knowing how many other shippers had taken the notion to ship to the same market at about the same time. After the car arrived there was no means for withdrawing it if the market was found to be demoralized. Therefore, as soon as the citrus crop had increased to such an extent that gluts were possible in the large markets to which the cars were ordinarily billed, buying oranges on the trees became not merchandizing but speculation, and speculation of the most dangerous kind. Owing to the high fixed charges such as packing and freight, losses through low prices in the Eastern cities were sometimes heavy, hence a speculative buyer could offer but little to the grower for his fruit. In fact, there were times when no buyer appeared for part of the fruit at any price.

But the worst evils of speculative buying were due to what the growers almost unanimously believe to have been an agreement among buyers to fix maximum prices and to apportion the producing area among themselves in a manner similar to that which was employed by the famous pipe pool. So far as is known no written agreements have come to light, but the facts are undoubted that for practical purposes the territory was assigned among the various firms of buyers and that firms would refrain from invading one another's territory. That is, a grower would receive a bid for his crop from a certain buyer, and he would receive no other bids. Then, too, the prices offered were strangely uniform in comparison with the wide fluctuations which the Eastern market was constantly exhibiting.

Selling on commission was hardly more satisfactory. According to this plan the grower raised his fruit, had it packed, and then either sold it through a California shipper or consigned it to some commission firm in the East. At that time selling on order had not become highly developed, so if sold through a California shipper the fruit was usually started rolling toward the market which seemed to offer the greatest possibilities. But the journey was a long one, delays were frequent, rough handling and poor ventilation or refrigeration were the rule. When the fruit finally reached its destination decay might have developed until the product was practically unsalable, the weather might be adverse, or the market might be over supplied. In any of these contingencies an individual grower might incur a loss which favorable prices for the rest of his crop might not more than recoup. In other words, by this method risks were undistributed.

If his fruit was consigned to a commission merchant in the East, the grower was subject in a peculiar degree to all the possibilities of exploitation involved in that system. The owner and agent were at the opposite sides of the continent, and the likelihood of detection in betrayal of trust was small. Decay was frequently heavy, so a grower was not likely to become suspicious over a report that the shipment was in poor condition at arrival and consequently at receiving a low price, even though the shipment might be in fact perfectly sound. Besides, with the wide changes in price from day to day it was comparatively easy to manipulate the ostensible date of sale forward or backward by a day or two in order to indicate a poor price to the owner, even if the consignment had actually been sold on a strong market. In short, the grower was absolutely dependent on the integrity of his agent.

Another cause of confusion was the transportation situation. If citrus fruits are to reach the market in the best condition ordinary freight service is out of the question. Their susceptibility to heat and cold necessitates special precautions throughout the year. About half of the orange crop goes forward under ventilation and half under refrigeration, and it is highly important in either case that the cars receive constant attention en route: for ventilation, to see that the vents are in the proper position; for refrigeration, to see that the ice bunkers are kept reasonably full and that the drains are in order. As the boxes are loaded in the cars with air spaces between the several rows, rough handling may result in a shifted load which, unless it is remedied, may cause havoc before the car reaches its destination. Though mechanically sound oranges and lemons are far from highly perishable products, decay develops rapidly in any abrasion of the skin and will spread to uninjured fruit. Since there is sure to be some damaged fruit in every shipment, an expedited railway service is required if the percentage of decay is to be kept low. Cars must not be shunted to a side track and await the railway's convenience for moving them. Under the old plan of individual shipments the shipper was compelled to take the railroad's word for the kind of attention the car received en route and for the condition of the fruit on arrival. What could a grower do when the railroad reported that his car arrived in good condition, and the commission merchant reported for the same car that the fruit could hardly be sold at any price because of its poor condition?

These were some of the difficulties which beset the growers when they organized the Orange Growers' Protective Union. The purpose of the union was primarily to secure a better control of the market and to escape from the exploitation of buyers and commission men. It was felt to be unfair that some growers should receive from 100 per cent. to 200 per cent. more than others for the same quality of fruit when all had exercised the same degree of diligence in producing and marketing it. However, the union was not firmly organized, as the principles requisite to a stable enterprise were not clearly grasped by its originators, even though these men must receive credit for attempting to remedy an evil situation.

Concerted activity on the part of the growers was the last thing desired by the speculative shippers, and their activities against the union were persistent, for they saw in any organization a sure decline in their profits and possibly the ruin of their business. Their attacks were successful. The union speedily succumbed, and then followed the famous "red ink" years when it was an open question whether the business of producing citrus fruits in California was going to survive or not. Speculative buying held high carnival, and many a man was compelled to accept for his crop a fraction of what it had cost him to produce it. Growers who preferred to gamble on the state of the market by selling on commission fared little better. The culmination of the years of disaster was reached in 1892-93, when "red ink" accounts in startling numbers were recorded. "Red ink" was the euphemistic way of saying that a grower had not only produced and given away his crop for nothing but that he also received a bill at the end of the year as a reward for his pains. It meant that the price would not cover the costs of packing and transportation, let alone yielding anything toward the expenses of production. It frequently happened that the larger the crop a grower produced the more he was indebted to the packer or shipper at the end of the season.

Obviously these conditions were unendurable, but as so frequently happens, it seemed that all the bad plans had to undergo a thorough trial before agreement could be reached on a workable basis. Various abortive attempts were made at reconciling the interests of growers and shippers. Together they tried to regulate shipments and control prices, but to no avail. The usual outcome was that the growers would find themselves fixed more firmly than ever in the power of the speculators. Mr. P. J. Dreher, at present Vice-President of the California Fruit Growers Exchange, writes of this period: "All attempts so far as I know worked through the commission men and fruit shippers excepting the Pachappa Orange Growers' Association at Riverside, and the Claremont Fruit Growers' Association at Claremont, both of which were operating during the season of 1892-93, the former under the management of T. H. B. Chamblin, while I had the honor of being the president of the latter. Both of these were strictly cooperative organizations of growers."[1] In fact, Mr. Chamblin first began to put into practice his ideas of cooperation about 1888. The Pachappa Association properly marks the true beginning of cooperative organization in the California citrus industry, and Mr. Chamblin is fittingly known as the "Father of the Exchange."

As the average citrus holding is small while the equipment necessary for packing is elaborate and costly, it was out of the question for an ordinary grower to escape from the old line packer and shipper by doing the work for himself in his own plant. This suggested to Mr. Chamblin the possibility of a group of growers federating themselves together in the ownership of a common packing house. Then it was not a far step to the idea of selling the fruit of these joint owners through the officers of the association instead of each grower being compelled to make his own arrangements for marketing. Here in essence is the exchange idea, the employment of collective packing and collective marketing facilities.

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[1] Letter to the writer: dated November 19, 1915.

During the lean years of the early '90s members of the Pachappa Association had fared much better than had individual shippers, and this fact led to a meeting of growers in Los Angeles in 1893. The purpose of the convention was stated to be: "To provide for the marketing of all the citrus fruit at the lowest possible cost under uniform methods, and in a manner to secure to each grower a certain marketing of his fruit and the full average price to be obtained in the market for the entire season." Mr. Chamblin was the directing spirit of this meeting, and he outlined a plan according to which associations for packing the fruit were to be organized in the various districts. Then from each of these districts one representative was to be selected, and the group of representatives was to form a central committee which was to attend to the marketing arrangements for all of the associations. This plan, essentially sound in principle, was finally adopted and put into operation during the years 1893-94 and 1894-95. But the details were not thoroughly worked out, and a complete reorganization was effected in October, 1895, when the Southern California Fruit Exchange was organized entirely along cooperative lines.

Before turning to an examination of this perfected organization, we must consider some of the reasons why the sporadic efforts of the citrus growers to work out their own salvation were finally successful when most other agricultural industries, even though much older, still rely on the local buyer or the commission man for the disposal of their crops. Were there any peculiar factors in the citrus growers' situation which impelled them to organize and which could furnish the basis for an enduring and effective scheme of organization?

The key to the whole explanation of both the cause and the effectiveness of cooperation in the citrus industry is found in the fact that oranges and lemons were formerly and are even yet to a large extent an agricultural specialty. Professor Carver well says that success in growing a staple product or one which will always sell at some quotable price is primarily attained by lowering the cost of production, by producing a unit at a cost lower than the general average. But with an agricultural specialty success depends not primarily on being a good producer but on being a good seller.[1] A consumer is rarely induced to buy more flour or more soap by skillful advertising or attractive displays; he merely is induced to buy one kind rather than another. With a specialty there is no universal year in and year out demand. Consumers must be persuaded to take it at a remunerative price. If the price of a staple falls a few points there are buyers for practically unlimited amounts, but the demand for a specialty is not nearly so responsive. New increments added to an already supplied market often mean a more than proportional decline in price, and continued supplies may soon result in no price being offered at all. It is cold comfort to the producer of a specialty to know that because his methods of production were efficient he did not lose as much as some of his less efficient competitors lost.

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[1] Carver: "Principles of Rural Economics," p. 235.

In the early days of the orange business when but a few carloads were available for sale, consumers were sufficiently eager to take all the fruit offered at prices which were always attractive and sometimes highly gratifying to the growers. This very profitableness of the industry was the chief cause of that rapid expansion which would inevitably take away the opportunity for scarcity profits. As soon as citrus growing began to be looked upon as an industry instead of a bonanza scheme, thoughtful orchardists began to wonder where buyers were going to be found who would be willing to pay enough for the fruit to cover expenses and leave a profit. For it cannot be overemphasized that the fixed charges in putting citrus fruits on the market are higher than in almost any other agricultural industry, and the chances for loss correspondingly greater.

It would be gratuitous to assume that a California orange rancher is a philosophical type of individual who reasoned out on abstract grounds the benefits inherent in cooperation. Necessity drove him to it. If buyers and commission men had shown themselves able and willing to dispose of the crop in a reasonably satisfactory manner the old system would probably have flourished to this day, even if it could be shown that certain economies might be effected through cooperation. So far as buyers and commission men by chicanery and attempted exploitation cut their own throats through forcing the growers to organize they deserve scant sympathy. However, they have incurred more obloquy and invective than the facts warrant. There were certain difficulties inherent in the marketing of citrus fruits against which the buyers and packers were almost as helpless as the growers. No individual or firm could possibly afford to develop an information service that would give reports of the condition of each market every day, tell how much fruit had been sold and at what prices, how many cars were on track, how many were rolling toward each market, and the time they would arrive. All of this information was necessary if the crop was to be scientifically distributed geographically or in relation to time. Without such information all a shipper could do was to send his cars to a few of the largest markets, where an additional car would cause the least fall in price, and trust to fate that these markets would not be overcrowded when his shipments arrived. There are a large number of cities in the United States and Canada which can absorb, say, a carload of oranges a week, provided the consumption capacity of the place for oranges is properly worked up by advertising, including the actual display of the fruit. No one buyer in such a town would be able to handle a whole car at one time, and it would obviously be bad business for a shipper to keep an agent in a town in order to sell one car a week. Nor could a shipper in California risk billing a car to such a town on the chance that it would be profitable, for if another car happened to be there it is almost certain that neither car would pay the charges for packing and freight.

Oranges, then, must be sent regularly to every market that could use them; new markets must be developed and the shipping season prolonged, and shipments must be controlled so that gluts and consequent losses would not occur if the constantly increasing crop was to be sold at a profit. It should be reasonably clear that buyers and commission men could not have met these conditions, even if they had been far sighted and honest.

Of less significance than a wide and prolonged distribution of fruit, but by no means unimportant in impelling the growers to mutual effort, were the problems connected with large scale as contrasted with small scale enterprise. The fact that buyers and packers seemed to be consistently prosperous convinced the growers that there was money in citrus fruits even if they themselves had been losing. There seemed to be a good margin of profit both in packing and in selling oranges, and the growers concluded that if these profits could be transferred to themselves the result would be the same as if they had made their profits on the agricultural rather than on the commercial end of the business. It would also be apparent to any thoughtful grower that since the fixed charges for equipment and agents for packing and marketing, respectively, are extremely heavy, a large increase in the amount of fruit handled in one packing house or consigned to one agent would greatly reduce the unit costs for these necessary stages. A corollary from this conclusion would be that, if buyers and packers were making satisfactory profits when employing inefficient methods, a scientific system which had a few centrally located, well equipped packing houses which could be run to capacity and which had one agent to represent the associated producers in each market rather than an agent for each packer, might easily contain within itself the possibility of achieving marked financial success. The cost of collecting the information prerequisite to intelligent marketing would also be trifling when apportioned among a large number of shippers, but nothing less than prohibitive if attempted single handed.

Standardization of product and responsibility for it are two points where agriculture in general has lagged far behind manufacturing. As long as the packing of oranges was performed by numerous independent firms or individuals, there was the greatest diversity in the manner of packing and the care with which the labor was performed. The chief objection, however, to the individualistic system had its basis in the impossibility of establishing definite grades.

Two packing houses might handle the same quality of fruit and each put out a "fancy" grade, but that fact would not at all prove that a fancy orange from one house was approximately identical with a fancy orange from the other. Of all the fruit delivered, one house might segregate as fancy only 5 per cent., while the other might use the same term for 25 per cent. of its output. Similar conditions obtained for the other grades. So a prospective buyer of oranges in the Eastern market was not able to order by grade, as is done in the case of wheat and cotton, unless he happened to know the particular system of grading employed in the packing house from which he was buying, and it was obviously impossible for each one of the numerous California packing houses to be known personally to any large group of Eastern buyers. Therefore buyers were not likely to have as much confidence in the orange market as they would have had if quality had been more certain and uniform; they would be particularly diffident about sending orders to California for cars; they would only buy on inspection. Responsibility of many packers for the quality of their output existed only in imagination. A few packers had reputations which they tried to maintain, but too often green oranges or frosted oranges or mechanically injured oranges would be sent forward on the complacent, if short sighted, theory of caveat emptor, and indeed a deceived jobber or consumer had scant recourse. This policy again made the trade timid about handling oranges and precluded that expansion of consumption which was essential if the citrus industry was to live.

Persons familiar with the chaos in grading and packing methods and with the lack of responsibility for the quality of the product were finally persuaded that the only remedy for these conditions was through combining a large fraction of the industry in one organization which would enforce standards of uniformity, would be so widely known to all buyers as to inspire confidence, and which would stand behind its goods after the manner of any reputable business. In other words salvation was seen to lie in sound commercial methods rather than policies of strategy and charlatanism. Only a comprehensive organization for packing, shipping and marketing, one which had a real stake in the business and depended for its success on building up a permanent clientele could hope to effect these reforms.

It has already been suggested that oranges must be forwarded in a prompt and careful manner in order to obtain satisfactory results. But what redress did a single shipper have when he had suffered injury from the railroads? The carriers, however, were certain to be much more particular in their treatment of a powerful organization which had the machinery for detecting dereliction on the part of the railroads and the financial strength to prosecute damage claims. This became more and more apparent to the growers, and was impressed on their minds whenever shortage of cars or the wrecking of a fruit train occurred. Then there were troubles over the types of refrigerator cars furnished, over the transportation and refrigeration charges, and over the privilege of diversion. All in all, the transportation problems showed a wide field of endeavor for concerted as opposed to the old dissociated action.

The orange and lemon market has always been highly sensitive. A shortage of a few cars will make the price soar; a slight oversupply will cause a serious drop. An amount of fruit for each market rigidly fixed within narrow limits is the condition on which shippers must base their marketing policy. This inelasticity of demand makes the risks of loss from a glutted market great, risks which were accentuated by the necessity for heavy outlays before the favor of fortune could be tested by putting the fruit on the market. That is, losses to the individual might be great or gains large. For shippers as a whole there was the probability of obtaining only reasonable profits. In such a situation, the remedy against loss is obviously the distribution of risk. For a grower to pick a large part of his crop and entrust it to the vicissitudes of one market at any given time was to court disaster, if the market happened to be unfavorable. But what else could he do? As soon as buyers were unable to purchase all the crop and thus assume the marketing risks, there was nothing left but to ship through a California packer or commission merchant, or consign to an Eastern commission firm. What the grower wanted was to obtain the average price of fruit for the entire season. Both the justice and the advisability of this procedure appealed to him. He saw that if the fruit of all growers could be pooled the total amount received would certainly not be less than that from shipping by individual account, and would probably be more because of more even distribution. He also saw that with the risks distributed he could devote himself to producing good crops rather than trying to forecast an advantageous time for having his fruit reach the market.

With at least the rudiments of the foregoing advantages in mind, and prepared by a series of experiments in cooperation, the growers met in 1895 and formed the Southern California Fruit Exchange. This organization was completely cooperative in principle and comprehensive in scope. From the first it increased steadily in power and efficiency. Yet, as in so many cases, the growers were unable to stand prosperity, and in 1903 the Southern California Fruit Exchange combined with the principal non-exchange shipping interests under the name of the California Fruit Agency. About this organization it is exceedingly difficult to gain accurate information. There was a great deal of objection to its formation, and nobody seemed to know just what it was expected to do. Mr. Dezell, now Assistant General Manager of the California Fruit Growers Exchange, says that so far as he knows the contract of the California Fruit Agency is no longer accessible. Mr. Dreher, Vice-President of the Exchange, writes: "I know of nothing in print concerning the foundation of the California Fruit Agency. I was a participant, although an objector, and a minority member of that formation. In it the Exchange on the one end and the speculative shipper on the other formed a general selling agency, each factor handling its own fruit and protecting its own operations." The chief purpose of the agency seems to have been to sell as large a percentage of the crop as possible f. o. b., California.

This "incongruous combination of producers and dealers" lasted only from April 1, 1903, to August 31, 1904, and on resuming its independent operations the Southern California Fruit Exchange outlined its future policy as follows:

> Upon the formation of the California Fruit Agency, every effort was made to sell the fruit f. o. b., California. All agents were instructed to push this policy, and men were employed as salesmen in the sales department of the agency who possessed ability and much experience in that line, and who had been in the employ of the leading packers, as their salesmen, for many years.
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> Immediately after the California Fruit Agency was organized, April 1, 1903, f. o. b. orders for fruit (usual terms of inspection, etc.) were only received in limited numbers, and not sufficient to move a reasonable percentage of the crop, although climatic conditions in California were most favorable to restrict shipments. It soon became necessary, in order to move the crop, to ship and attempt to make sales in transit, or sell the fruit delivered at market value at the point and time of delivery.
>
> Our crops are now so large that all markets should be

constantly supplied with their full quota of fruit in order to consume the output. This distribution can be better accomplished by those most directly interested, the growers themselves. The citrus fruit grower is no longer independent of his neighbor as to marketing his crop, but each one is dependent upon the other, especially in so far as systematic distribution is concerned.

The Southern California Fruit Exchange is composed only of growers, who recognize all legitimate dealers in the trade, and who are organized for the purpose of disposing of their products in all markets of the country upon the most advantageous terms, and to secure distribution to the trade at the least expense compatible with the best service, securing to the consumer the fruit at reasonable prices, and to the grower the best average returns.

When the Southern California Fruit Exchange resumes its selling operations on September 1 next, in the absence of other instructions from, or a change in policy inaugurated by the growers themselves, through their representatives on its board of directors, the management will endeavor to sell the fruit in such manner as will bring the most money for the product, confining itself neither to cash sales in California, f. o. b. sales California (subject to inspection, draft attached to bill of lading), nor sales delivered, nor to any other one method. Its agents and representatives will be instructed to secure all orders possible for fruit, allowing the customer to take his preference as to whether he wants these orders to be for spot cash, f. o. b., usual terms, or delivered, subject of course to the confirmation of the Exchange or Association shipping.

During the period of the agency and that immediately preceding, the citrus fruit area had been rapidly expanding in the San Joaquin Valley and elsewhere. As the producing area expanded the Southern California Fruit Exchange also extended its organization to the new districts. The name therefore became inappropriate, so in March, 1905, the California Fruit Growers Exchange was incorporated, and in September of the same year it succeeded to the business of the Southern California Fruit Exchange. It is almost invariably to the California Fruit Growers Exchange that people refer when they talk about the California system of marketing. With the ground cleared by this review of the business necessities which induced the growers to cooperate and by the sketch of the various methods of organization attempted before they worked out what appears to be a permanent form of cooperation, we may proceed to an analysis of the structure of the exchange system.

CHAPTER IV

DEMOCRATIC ORGANIZATION OF THE COOPERATIVE EXCHANGE

The series of organizations which taken as a whole is known as the "exchange" is rather complicated, and there are prevalent many erroneous ideas about its composition and activities. Even in California many who have not had occasion to acquaint themselves with its real nature and purposes regard the exchange as the orange trust instead of what it is, a democratic group of cooperators. The exchange system is composed of three principal constituent factors: the local association, the district exchange and the central exchange. While the powers and functions of these factors often seem to the outside observer to overlap and conflict, in practice the system works with entire smoothness. Perhaps as good a parallel to the exchange structure as can be found is exhibited by the labor organizations. One typical form of the latter is characterized by the local union, the national union and the American Federation of Labor. In each case there is much local authority and relatively little central control. However, in the labor organizations there seems to be a tendency toward centralization, but in the exchange system the central exchange has no absolute authority; it is the servant and not the master.

Turning now to a study of the local packing association which forms the foundation stone of the exchange structure we find that the most satisfactory legal form which an association can assume is the cooperative, non-capital stock, non-profit form of organization which the laws of California permit.[1] There is no need of discussing the difficulties and dangers rendered possible by the transfer of shares to hostile interests when a cooperative organization attempts to conduct business while organized as an ordinary share corporation. The insurmountable objection, as well expressed by Powell,[2] is that ownership of shares gives the legal right to sell those shares, and since a cooperative society by definition is a group of people who work together, the society should be able to exclude those who would be unable to cooperate because of inherently conflicting interests. For present purposes it is sufficient to note that the California law leaves the matter of membership, voting and expenses to the discretion of each cooperative association. It also permits cooperation with other corporations to be practiced.

A group of growers, therefore, decide to associate themselves in the packing and marketing of their fruit. They apply for a non-profit charter of incorporation which sets forth the general features of the enterprise.[3] In brief, the ordinary citrus association charter gives the name of the corporation, states that its purpose is to pack and market citrus fruits without profit and to hold stocks or bonds of other corporations marketing citrus fruits or furnishing packing house or orchard supplies. After deducting expenses proceeds are to be distributed among the members according to the amount and quality of the fruit furnished by each. Voting power, contributions for the necessary equipment, and property interest in the corporation are to be proportionate to the number of bearing acres that a member has entered in the association, and on this basis new members may be admitted and have the same status as old members. A certificate of membership cannot be assigned, and an assignee can have no rights or privileges in the association except as provided by the by-laws.

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[1] It should be noted that most packing associations were organized before the enactment of the law permitting non-capital stock, non-profit agricultural organizations. Though wishing to pack and ship on the cooperative principle they had to organize as ordinary joint stock corporations. However, some associations have gone over to the non-profit form, and others are contemplating doing so. Since the tendency seems clearly in that direction, and since the non-profit form of organization shows citrus marketing at its best, that form has been adopted for detailed study. The California law authorizing non-profit cooperative associations was enacted in 1909 and may be found in State of California: Civil Code, James F. Deering, Editor, San Francisco, Bancroft-Whitney Co., 1915, p. 341 ff., articles 353 N-353 S.

[2] Powell: "Cooperation in Agriculture," pp. 42-44.

[3] The articles of incorporation and the by-laws of the associations composing the exchange system are quite similar, though of two different types. One type is the stock corporation which, however, specifies cooperative non-profit procedure as one of its principles; the other type is the non-profit organization. In methods the two

The real framework of the association appears only in its by-laws, and as a preliminary to explaining how an association actually carries on its business and meets its problems it is essential to know in detail what it may and may not do. Therefore, the important parts of a set of by-laws will be given, after which comments and explanations based upon them will be in order:

We, the undersigned members of the .... Association, constituting a majority of all the members and having more than a majority of all the votes of said Association, do hereby adopt the following new by-laws of said Corporation:

1. A certificate of membership shall be issued to each member, who thereunder shall have as many votes at all meetings as he has bearing acres of citrus orchards from which the fruit is being marketed through this Association. The number of such acres shall be fixed by the Board of

types are quite similar, therefore a description of one organization applies, with certain modifications, to all. The most accessible citation for the charter and by-laws of the best type of exchange association is found in Powell, "Cooperation in Agriculture," pp. 53-64.

Directors from time to time as may be necessary or proper and endorsed upon the margin of the membership certificate respectively and a record thereof kept in the books of the corporation. Each member will pay an initial fee of One Dollar for each of such bearing acres, and will further from time to time contribute his pro rata share of all sums required for packing operations to be paid either in cash or by deductions from fruit sales as the Directors may determine, but all voting power of any member shall cease when he parts with the control of the orchard for which such certificate was issued.

2. Such certificates of membership shall not be assignable, and the assignment thereof shall not confer to the assignee any voting power, property right or interest in this corporation except when transferred in connection with the bona fide sale and to the purchaser of the orchard for which it was issued.

3. Any member of this corporation may be expelled by members representing two-thirds of all the votes of the corporation for any reason which may to them seem sufficient at any general or special meeting, providing the interest of such member in the assets of the corporation be appraised by the Board of Directors and tendered in gold coin to such member within sixty days, conditioned only upon the return and cancellation of his certificate of membership—and upon such expulsion all right of such member in said corporation ceases.

4. This corporation will be affiliated with the [one of the district exchanges] in the marketing of its fruit, and will avail itself of the marketing facilities of the California Fruit Growers Exchange and participate in its management through such representatives as may from time to time be authorized.

5. All deductions which have heretofore been made or which may be hereafter made from sales of fruit to meet subscriptions to the stock of the [Fruit Growers Supply Company] or other corporation furnishing packing house or orchard supplies for the membership, shall be treated as a packing charge ratably on all boxes of fruit packed during

the year such subscriptions were or will be respectively paid. The debit balance of such stock investment shall be inventoried each year as packing house supplies, and all principal or interest repaid shall be ratably credited to the boxes packed each year as repaid respectively.

6. The Board of Directors may fix the boundaries of the territory tributary to the packing house of this Association from which fruit will be received and packed, but after a member has been accepted no change shall be made in boundaries which will exclude him without his consent until his property right and interest in the corporation has been appraised by the Board of Directors and the value thereof so found paid to him in gold coin on surrender of his membership certificate.

7. The annual meeting. . . . The Secretary shall mail to each member a notice of said meeting at least two weeks prior to the date thereof.

The President of the Board of Directors shall preside. . . .

At this meeting Directors shall be elected, who shall serve for one year, or until their successors shall be elected and qualified; and such other business shall be transacted as may properly come before the meeting. In the election of Directors, or the transaction of any other business, each member shall have as many votes as he has acres of bearing orchards marketed through this Association.

Proxies may be voted by any member or representative of a member, authorized in writing to do so, such authority having first been filed with the Secretary.

Special meetings . . . , and one-third of the resident members shall constitute a quorum to do business at any meeting of members.

At any such meeting, by a majority of all votes, the office of any Director or Directors may be declared vacant, and the meeting may at once proceed to elect Directors to fill such vacancies.

8. [The Directors shall organize themselves for business by electing one of their number President and one Vice-President.] They shall also elect a Secretary and Manager, and designate such bank or banks to act as Treasuries as they may see fit.

9. The Board of Directors shall have general management of the affairs of the Corporation, authorize all expenditures, make all contracts and constitute the governing power of the Corporation in all matters of business. They shall elect a foreman, and such other employees as they deem necessary to the proper carrying on of the business of the Corporation, shall fix their salaries, and define their duties.

The Board of Directors shall enter into such business relations with the [district] Fruit Exchange or other organization forming a part of the [California Fruit Growers Exchange], for the marketing of fruit and such other matters as they deem necessary. . . .

Nothing in this article shall be so taken or construed as to authorize any other organization to incur any debt or obligation on behalf of or which shall be binding upon this Corporation, without the full consent of the Board of Directors of this Corporation.

In case of damage from any cause to any crop, the Directors may exclude such orchard, in whole or in part, from participating in the benefits of this Corporation. In which event the grower may market such rejected fruit to the best advantage, either through this Corporation on his separate account or otherwise.

10. The Directors shall cause proper books to be kept, showing the amount of fruit delivered by each member, and the variety and grade thereof. The books and correspondence of the Corporation shall be in the name of the Corporation, and each member shall have access to said books and correspondence on any business day during ordinary working hours.

11. Any bona fide grower of citrus fruits properly tributary to the packing house of this Association, who shall sign the contract hereto appended, may become a member of this Corporation by contributing his pro rata share of the operating investment in accordance with the Articles of Incorporation.

12. It shall be the duty of all members of this Corporation, and they hereby agree, to sell and market their citrus

fruit through the agency of or by means provided and directed or by the agency or agents selected and employed by this Corporation only, and no member shall be at liberty to sell, market, or consign his citrus fruits through or by any other agency than such as are directed and provided or selected and employed by this Corporation.

In case any member of this Corporation does otherwise sell, market, or consign his said citrus fruits, his voting power and interest in this Association is forfeited, and he shall immediately pay to the Treasurer of this Corporation the sum of twenty-five (25) cents for each and every packed box of commercial weight so sold, marketed, or consigned during the remainder of such fiscal year as liquidated damages; it being impracticable and extremely difficult to fix the actual damages suffered by this Corporation.

Every member selling or shipping fruit through or by means established or authorized by this Corporation shall pay such brokerage per box as may be found necessary to create such revenue as will defray all expenses necessarily incurred in the conduct of the business of the Corporation.

It shall be the duty of all members to see that their fruit is picked and handled in as careful a manner as possible, and all fruit shall be delivered to the packing house on conveyances with easy springs. Any fruit handled in a careless manner or contrary to the above rule shall be subject to rejection.

And when by a majority of votes the members have adopted cooperative picking of fruit, each member shall have his fruit picked by the Association at such times and in such quantities or proportion as the Board of Directors may direct.

13. Any member may withdraw his citrus fruit for any year by filing a notice in writing with the Secretary of this Corporation during the first fourteen days of September in any year, stating that he withdraws his citrus fruits from the control of the Corporation for the next ensuing year.

14. Picking orders shall be given out pro rata as nearly as possible. Each variety of fruit shall be graded according to quality, and each member shall receive credit for the number of pounds delivered of each variety and grade that

may be established and receive pay for same on the basis of what all fruit of similar grade has been sold for, in the particular pool in which his fruit was delivered, less expenses. The net proceeds of sales shall be distributed pro rata from time to time as fast as the returns become available.

15. The funds of the Corporation shall be deposited upon their receipt by the Secretary with the bank or banks designated as Treasuries, and shall only be paid out on warrants signed by the President or Vice-President and the Secretary.

16. A brand or brands shall be established which shall be placed on the end of each box of fruit.

17. The Board of Directors shall have authority to determine into what pools deliveries of fruit shall be divided, both of oranges and lemons. Members may express their preference in the annual meeting, and the Directors will be guided thereby, but may change same when in their judgment it becomes advisable for the best interests of the Corporation.

21. No fruit shall be marketed by this Corporation that does not come through the ordinary channels of membership, and no member shall be allowed to purchase fruit outside . . . and market it through this Corporation.

23. These by-laws may be amended or altered by a vote of two-thirds of all votes at the annual meeting, or at any special meeting called for that purpose.

24. Nothing contained in these by-laws shall be construed to interfere with bona fide sales of orchard property, together with the fruit thereon, and any purchaser of such property may at his option, upon signing the by-laws and contract and either purchasing the certificate of the former owner or contributing his pro rata share of the operating investment, have the same membership rights as the original member.

25. On all questions as to the interpretation of these by-laws, the decision of the Directors shall be final, unless rescinded at a general meeting of the Corporation.

Then the growers sign the following contract between themselves and the association:

> We, the undersigned, growers of citrus fruits, being desirous of having our fruit handled in a manner substantially as set forth in the above by-laws, do, for such purpose, hereby severally constitute and appoint the ...., California, a Corporation organized under the laws of the State of California, our sole agent to pack and sell all citrus fruits which may be grown on our respective orchards during the entire period of membership in said Corporation. We and each of us do further agree that all expenses incurred by said Corporation in handling and marketing said fruits shall be paid out of the proceeds of the sale of said fruit pro rata, according to the amount of fruit furnished by each of us respectively, and we and each of us agree to accept for the crop our pro rata share of the net proceeds of the sale of fruit furnished by us, after deducting the cost of packing, selling, and other necessary expenses. Nothing herein contained shall be construed to interfere with bona fide sales of orchard property. Any and each of us who will otherwise dispose of the merchantable fruit grown on the property hereby contracted, during the period of this contract, shall pay to the Corporation the sum of twenty-five (25) cents for each and every packed box of commercial weight so sold, marketed, or consigned, as liquidated damages, as provided in the foregoing by-laws, which are hereby made a part of this contract.

Some of the provisions of the articles of incorporation and of the by-laws require some elaboration to make clear just how a fruit association actually works, what are its problems, and how it meets them. Enough has been said to indicate that the non-profit form of organization is highly desirable. If a member's income depended on the number of shares of stock which he owned, even if membership were confined to actual growers, a premium would be placed on inefficiency. If returns were to be based on acreage alone, a poor grower with many acres would fare better than a grower who produced large crops of good quality on a few acres. But when proceeds are distributed according to the quality and quantity of fruit shipped by the association while contributions to the equipment and packing house are based on acreage inefficiency is penalized.

Very properly the articles of incorporation are left somewhat vague, and the real body of principles governing the conduct of the association is given over to the by-laws. For the by-laws are formulated and adopted and amended by the members themselves, and with the ready means of entrance and withdrawal which most associations provide for, one can be certain that a person belonging to an association is there because he believes in the general principles under which the association is governed. In short, a citrus association presents a pure form of popular government, an industrial democracy. Associations have the initiative, the referendum, the recall of officeholders and the recall of judicial decisions; they have a kind of combination of the commission and the city manager form of administration.

Among the most troublesome questions which confront growers when considering the advisability of cooperation are those related to voting power and those devoted to devising a plan by which the financial burden of the new enterprise can be equitably distributed. The "one man, one vote" scheme may be satisfactory in organizations in which all the members have approximately equal financial interests. But in a citrus association it is the rule and not the exception that great inequality exists. In the same organization will be found the man with a five acre grove and the man with 100 acres. The latter is not likely to be interested in a cooperative project if his large holdings do not receive proportionate recognition. So the difficulty is obviated, both in the ordinary and in the non-profit associations, by basing voting power on the number of bearing acres entered in the association. When an ordinary corporation is formed it is quite usual to issue shares at a par value of $1, with the provision that each intending cooperator buy ten shares for each acre of bearing orchard. Under the non-profit plan an entrance fee of $1 or $10 may be charged for each acre that is entered.

Though theoretically voting power is thus unequal, it is quite common in growers' meetings for ordinary questions to be decided by the single "aye" and "nay" method, but any member is free to call for a vote according to stock ownership or acres entered in the association. Moreover, when it comes to the election of directors the voting is always by ballot and according to acreage. And since the election of directors is usually the most important item of business to be transacted, the large owner does not feel that his interests are being put in jeopardy by an "aye" and "nay" vote, while the small owner is not made to feel his insignificance as would be the case if all matters were decided by an acreage vote.

The equitable division of the financial burden incident to erecting a packing house and buying equipment is not a simple matter. A first class plant cannot be obtained for less than $10,000 and may cost twice that amount. Then if the association decides to install a pre-cooling plant, $50,000 additional may be required. There is little difficulty in organizing a cooperative egg society where the necessary investment is small, but in a citrus association the financial stake of no member is negligible, while the outlay of the larger grower is so considerable that his allegiance to the cooperative principle can only be secured if the financial organization seems to him to square with substantial justice.

Let us assume a typical case. A group of fifty growers, owning a total of 500 acres, contemplate forming an association. Suppose twenty growers own a total of 100 acres, twenty others own 200 acres, five own 75, four own 80, and one owns 45 acres. Now assuming that the packing house is estimated to cost $20,000, it is evident that a contribution of $40 for each acre of orchard would be necessary. In other words, those owning on the average five acres would be involved to the extent of $200 each, those owning ten acres would be liable for $400 each, and so on, until the man owning forty-five acres would have to contribute $1,800 as his share.

However, it is easily possible that one of the five acre men owns a grove of full maturity and heavy yield from which he expects to pick eight boxes from each of the ninety trees on each acre, or a total of 3,600 boxes. But the forty-five acre grove may be but four or five years old and just coming into bearing,[4] and the grower may expect a yield of less than one box to a tree. In such a case the man with five acres would use the facilities of the packing house more than the man with forty-five acres, though the latter's contribution for the plant would be nine times as great. Besides, bringing an orange or lemon grove into bearing is a long and costly process, and just before the trees begin to make a substantial return is likely to be the exact time when the grower is least able to undergo additional expense in the form of stock purchases.

The illustration just given is, of course, extreme, and was used merely to bring out the point that since large differences in productiveness in different groves is the rule, assessment for the plant according to acreage is not entirely satisfactory. On the other hand, assessment according to boxes shipped is impossible, for would the owner of the five acre grove, valued, say, at $15,000, submit to making a contribution equal to that of the man whose forty-five acre grove is worth $45,000? Probably the acreage system is the best that can be devised, though imperfect.

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[4] In actual practice, four or five years is commonly adopted as the age at which stock must be taken in the association if fruit is to be accepted. The insignificant amounts of fruit from younger trees are accepted along with a member's fruit from older trees without additional stock ownership.

When a new association is being formed it is usual to secure a loan from a bank on the note of some of the leading members or upon the note of the corporation. Securing a loan to start a cooperative project is difficult in some countries and in parts of our own country where the members have little or no financial responsibility. But as stated above, the orange growers are with few exceptions men of some means, and it is perfectly easy to obtain the capital requisite for a packing house. To the loan may be added the proceeds from entrance fees or sales of stock, but it is not usual for members on starting an enterprise to build and equip their plant from assessments of members only, without recourse to a loan. In fact, many associations allow the loan to continue indefinitely, simply regarding interest charges as a part of ordinary expenses, while others pay off their indebtedness by retaining a small amount each year from the proceeds of fruit sales.

The provision in the non-profit organizations that membership shall not be transferable is wise. There is no need of dwelling on the dangers of allowing outside or opposed interests to be represented in a cooperative association. In the ordinary share corporation the same end is accomplished by paying no dividends or only ordinary dividends on the shares. If no interest is paid, there is no inducement for non-growers to try to gain control over shares, or for growers to take out more shares for each acre than are required by the rules of the association. Besides, the issuance and transfer of shares is usually rigidly controlled by the directors of the association. But citrus property in

California changes hands with amazing frequency in comparison with the rest of the country, where a farm often stays in the same family for generations. While figures are not obtainable, fairly intimate knowledge supports the assertion that the average length of tenure for citrus groves does not exceed eight years. Therefore it would be unreasonable and unnecessary to make the purchaser of a grove go through the formality of joining the association and having new certificates of membership issued for groves that are already in the association. So the plan is to have certificates of membership apply to specified groves instead of to specified individuals, and the certificates are transferred to the new owner by substituting his name for that of the former owner.

This plan also means that when a man sells his orchard he loses his interest and rights in the association automatically, and he consequently has no motive for not transferring his certificates to the new owner. Instead, immediate membership in a good association is an added inducement held out to prospective buyers. In addition, the plan prevents the sale of certificates of membership without the sale of the grove for which they are issued. The plan is, then, both convenient and just, it does not impede bona fide sales, yet it adequately protects the integrity of the association's membership.

Harmony within an association is not always maintained. Very substantial differences of opinion are constantly arising over policies and over the actual operation of the business. After the majority has determined upon a certain line of action, it is not expedient that it be nullified by one or two recalcitrant members. Suppose, for example, that an association adopts a rigid picking requirement in order to maintain its good name for sound fruit on the market. The slovenliness of one member must not be allowed to ruin the whole scheme. In other words, there must be some machinery for coercion. This is arranged for in the rule that permits expulsion, provided the intractable member's equity in the organization is appraised and paid. However, expulsions are so few that the rule is in reality a dead letter. Members often leave because of dissatisfaction, but almost never because of compulsion.

Rule 4 merely provides that the association shall be an integral part of the California Fruit Growers Exchange and can best be treated in connection with the descriptions of the district exchanges and central exchange. Rule 5 refers to holding stock in the Fruit Growers Supply Company, a corporation owned by the various associations and whose function it is to furnish packing and orchard supplies to members. The stock in that corporation is paid for by withholding one cent or two cents a box on all boxes shipped through the association.

The power given to the board of directors to fix boundaries of the region within which acreage is eligible for membership is of the utmost importance. Picture a citrus area extending from the foot hills down into a broad valley. All this territory may be naturally tributary to a single town in which the packing house must be established and through which the fruit must be shipped. The layman would say that the logical procedure would be to erect and equip one large efficient plant to handle the whole output of the area. It is quite true that a large house can operate at a less unit cost than a small one; yet, more likely than not, instead of this one house will be found two houses or more. Why? Recalling the great diversity in the producing area will furnish the clue. Foot hill and valley oranges are quite likely to differ in color and texture. More important still, valley oranges are sometimes frosted when upland fruit escapes. A house that sometimes ships frosted fruit cannot be expected to have the best reputation on the market, so the foot hill growers may be unwilling to let their uninjured fruit be sold through an organization with a compromised reputation. Hence they organize a house of their own and seek to establish a name for perfect goods. Let us assume that they succeed and that preference on the market is given to fruit from their house. Their packing house may adjoin that of the original association which formerly packed for the whole region. Hence it is as convenient for any grower in the whole region to deliver to the new house as to the old. Obviously the result would be that growers would try to join the new association in order to share in the better prices unless the directors of that association had the power to draw a certain fixed line below which there was danger of frost and say that only growers above that line were eligible for membership in the new organization.

With reference to the annual meetings, it is only necessary to note that the rules are quite free from technicalities. Proxies are allowed, though an association usually makes the utmost effort to have all the members present. Special meetings are easily called, though they are rare, and a provision more interesting than important is that which states that at any regular or special meeting any director or all of them may be recalled by a majority of all votes in the association and their places immediately filled. That is, if a majority of the members becomes convinced that the directors are not properly handling the business of the association, all that is necessary is to call a special meeting and turn the offenders out.

The annual meeting of the association is a semi-festal occasion for the citrus community. It is an open forum with everybody welcome. Beginning at 9 or 9:30 o'clock in the morning it sometimes continues till late in the afternoon. The orchardists, their wives and sometimes their children are present; the local banker, editor and minister are apt to look in at part of the meeting; members and managers of other associations are on hand, seeking pointers; in fact, anybody interested in growing and packing citrus fruits is likely to be seen. In order to allow growers to see what their neighbors in other associations are doing a kind of schedule of dates is arranged for the meetings of a district, but the accepted time for all meetings is the early part of September, a time when one fruit year has practically closed and before a new one is opened.

The president of the board of directors is in the chair, and the meeting is organized by determining whether a quorum is present and what proxies are to be recognized. Then the manager of the association reviews the year's activities in a report which is more or less edifying according as he has or has not literary and statistical skill. Copies of the report or at least the important figures in the year's operations are usually prepared and presented to the members in advance so that they can follow the manager's thought intelligently. After reviewing those general features of the business which seem to call for attention the manager takes up in detail the amount of fruit handled, the cost of handling, the total proceeds from the sales of fruit, the average gross and average net price a box. Comparisons are likely to be made with former years to indicate progress or to show why the business has not come up to previous records. Constructive suggestions frequently conclude the report: recommendations that the picking be more rigidly standardized, that new or improved machinery be purchased, that the packing house be enlarged, that a new brand be established, or what not.

Following the manager, some representative of the bank which has been designated as treasury reads a review of the financial standing of the association, or the treasurer's report may be read by the manager. Discussion about the facts of these reports, to the exclusion of their suggestions for changes, is then conducted till noon, when a dinner together is enjoyed at the packing house. The dinner may be provided by the house and superintended by the manager, or it may be left to the wives of the members. At the conclusion of a social hour, during which the machinery of the plant is frequently put in motion in order to illustrate its actual operation to visitors and the women, the meeting is reconvened for business. At the afternoon session, the manager of the district exchange of which the association is a member gives his report and makes what suggestions seem good to him. There may also be communications from the central exchange or there may be a short address or two on subjects of interest to the growers.

Then occurs the most interesting time of all, the time when the managers' programs are considered, when new business of any kind can be directly introduced from the floor, when grievances, real or imaginary, emerge from their lurking places—in fact, when all the thoughts of the growers are, so to say, thrown on the table, assorted, classified and evaluated. Orange growers are often not more reasonable than other classes of men, so there is likely to be much futility and stupidity and perversity exhibited at this session along with some sane plans or wholesome criticism. Even this inanity, however, probably performs a useful function, as it shows the members clearly some whom they do not want for directors. The managers of the association and of the district exchange often come in for a thorough grilling, being called to task for past shortcomings and exhorted as to future conduct. Policies recommended by the management are dissected and scrutinized. Counter policies are proposed by members; other members bring out advantages and objections. Thus the meeting continues as a kind of clearing house for ideas on the citrus marketing problem. Views are classified, misunderstandings are explained, improvements are adopted.

During the session given over to discussion and new business there is sometimes a tendency for the more substantial members to have too little to say and for a few noisy, irascible, relatively insignificant growers who are very jealous of their rights and privileges in the association to monopolize too much of the time. In one way, this situation is salutary, as the small grower feels that he is a man of some consequence in the association, a good thing for him and also for the association; on the other hand, the house does not always have the advantage of listening to the sounder business sense of the larger and more prosperous of the growers.

Finally, when all wounds have been staunched or else pronounced incurable and when the general policy for the succeeding year has been formulated, the meeting proceeds to the election of directors. It is not necessary to argue about the importance of selecting an efficient board. On the wisdom of this election depends to a considerable degree the prosperity of the whole community. Though the tenure of office is but one year, and hence a full board must be elected, there are always certain growers whose fitness for the directorship is so obvious that their reelection is assured. Nor must it be assumed that only the large owners are desired as directors by practically the entire membership. Frequently a man known for his intelligence and progressiveness owns but a few acres of orchard and devotes most of his time to other pursuits, yet everybody recognizes that his presence on the board would be valuable. Often a man with small acreage is noted for producing unusually large or unusually fine crops of fruit; he too is likely to be selected. Nevertheless, all this does not militate against the fact that the men with relatively large holdings are better represented on the board than those with small holdings. All in all, however, the business affairs of the association can more safely be entrusted to the prominent growers than to any other group.

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CHAPTER V

CONSTITUTION OF THE CALIFORNIA CITRUS GROWERS' EXCHANGES

After the election and at the close of the meeting the newly elected board of directors customarily organizes for business by choosing its officers. It is desirable to select as president a man of tact who can preserve harmony among the members, a man who is not too closely tied down to the routine duties of his grove but who can spend considerable time in behalf of the association attending fruit growers' meetings, attending the weekly meetings of the California Fruit Growers Exchange in Los Angeles, and generally being on the alert for new and improved methods of growing and packing fruit. However, the choice of the president is of slight importance as compared with the choice of the manager. Indeed, this is the biggest single act which the board performs.

The California citrus associations have avoided one peril that has been the undoing of so many cooperative societies, namely, the requirement or the custom that the manager shall be a member. A free hand is given to the directors and they secure the best manager that can be had, regardless of whether he is a citrus grower. Sometimes a member has had the business experience to fit him for the position of manager, and then there is no prejudice to his selection, but in general it seems to be more satisfactory to recognize that producing citrus fruits and packing citrus fruits are separate industries and that specialized skill for the latter is most apt to be found outside the ranks of the orchardists.

Another besetting sin of cooperative societies is their refusal to pay a salary sufficient to attract a manager with high grade ability. This pitfall the citrus associations have also escaped. Salaries of $2,000 to $3,500 are the rule, and for this sum competent men can be secured.

A successful manager must be possessed of an unusual number of rare qualities. In the first place, he must inspire enough confidence to hold his membership. Withdrawal being a simple matter, an association can easily be wrecked if the members become dissatisfied with what they believe to be either inefficiency or arbitrariness. Just there lies the manager's difficulty: what may appear autocratic use of power to some may be called efficiency by others. If he adopts the policy of letting the members do pretty much as they please, there are sure to be some who call the plan not freedom but slovenliness. How can a manager suit both those who believe a member should be allowed to deliver fruit when he himself desires and to any amount, and those who believe that the good of the individual member is best served by considering the good of the association as a whole, and that the manager should decide when a member should deliver his fruit?

To an outside observer it seems that a scientific orderly distribution of fruit cannot take place unless the manager controls the time and the quantity of picking. Probably most managers feel the same way, but they must not apply their belief to such an extent that members holding a different view are antagonized. The manager must be broad minded and fair minded. He must be able to take suggestions from members and from other packing houses and then go ahead as his judgment directs. Above all there must be no suspicion of favoritism, for the fear of discrimination is not far beneath the surface in any of the members, and an association permeated by rumors and backbitings cannot achieve any marked success. He must have considerable administrative ability and know how to handle men. As the packing house in many ways resembles a factory, the manager must possess technical skill, must be able to organize his mechanical and labor force efficiently, and besides superintend the wider business aspects of the association, such as buying supplies and keeping in touch with the market. In short, a loosely formed group such as a citrus association requires leadership if much is to be accomplished, and the manager should furnish it.

There is some reason for thinking that it might be preferable to elect the manager by a direct vote of the membership rather than delegate the choice to the board of directors. If elected by a popular vote, the manager might feel that he had more solid support in his work. Members also would more readily follow the lead of a manager whom they had been directly instrumental in electing. But what would be the result if two candidates for the managership were almost equally popular with the members, if the contest became keen, and one was finally elected by a narrow majority? This situation might easily arise, and in that case the association would be in a worse state than if the manager had been appointed by the directors. Another point is that a manager chosen by the membership would tend to take a position of leadership in the association, while a manager chosen by the directors might tend to be subservient to them, to curry favor with them as a bid to reappointment, rather than care for the interests of the association as a whole. In other words, the manager is in a position to know and should know advantageous packing and shipping policies better than the directors, and he may be prevented from making the best use of his knowledge if he feels compelled to take orders from an employer in the form of a board of directors. However, we are not likely to settle the proper relation of the executive to the appointing power in this place.

The directors have regular monthly meetings and special meetings as required. Some associations pay the directors, and some do not, but the payment for meetings actually attended is becoming more and more prevalent. A meeting is regarded as spoiling half a day, so the director receives $1.50, $2 or $2.50 for his half day's services. This policy of paying the directors has two beneficial effects. First, the director is inclined to feel a more binding responsibility and to take a more thoughtful interest in the welfare of the association than if his services were gratuitous, or, as sometimes happened, almost commandeered. Second, a man in moderate circumstances, to whom time is money, often felt under the system of non-payment that he could scarcely afford to sacrifice the time which the acceptance of the office entailed.

What kinds of problems come before the directors and how they are handled may best be set forth by taking a hypothetical fruit year and following it through. However, it must be borne in mind throughout this discussion that though the resulting policies may be nearly identical there is considerable difference in the amount of initiative that comes from the directors and the manager, respectively, in the various associations. Among the first things to be done in preparation for the fruit year, which starts in November, are the selection of the proper subordinate officers, such as the bookkeeper, foreman of the packing house, foreman of the picking gang, etc., and the purchasing of packing supplies. There is at times difficulty in obtaining supplies on a moment's notice, so a provident house wishes to get its orders in early for box shooks, both for picking and packing boxes, for labels and wrappers and nails, for metal straps and curtains, for picking ladders, for new machinery or repairs for old, and numerous other items. But neither does the house want to order more supplies than it will need. Therefore, at, say, their October meeting the directors and manager, from their general knowledge of what the crop is likely to be, estimate the quantity of supplies that will be needed and empower the manager to take measures for having them on hand when the packing season begins.

At the November meeting account is taken of the rate at which the fruit is maturing and how much, if any, shall be sent forward for the holiday market. In the Tulare region, where the vast bulk of the crop is shipped during November and December, packing facilities run at high speed for this holiday period, but in southern California the association machinery does not much more than get under way by December. For the November and December pools or one holiday pool, as decided by the directors, growers are often allowed to contribute about the amounts they wish, as it would be impossible to furnish any great amount of mature fruit. In December the directors have placed before them careful estimates, prepared by the manager, of all the fruit that is likely to be shipped through the association during the current year. The estimates are prepared after the fruit is beginning to mature and consequently make a showing on the trees by requesting each member to calculate with the utmost possible accuracy how many field boxes of fruit his grove is going to pick. Often the manager or picking foreman makes an independent estimate so as to check the grower's results. These estimates may not seem of much significance to an outsider, but associations have often lost thousands of dollars because of inaccurate calculations. If too large an estimate is made the crop is all sold before the end of the season and a demand left unsupplied. If the estimate is too small, a surplus accumulates at the end of the season and the market is demoralized by too heavy shipments.

With the estimates of their own crop and as accurate statistics as can be had of the total citrus crop both in California and Florida before them, the directors and the manager undertake to predict the course of the market. They study reports of their own and others' movements of fruit for past years, seeing what quantities were shipped at various times and what prices were obtained for such shipments. Let us assume that for a period of years prices had tended to rise toward the end of the navel season, say, in May and June. Our manager and directors know that they are in a district where the fruit ordinarily hangs on well and retains its quality. "Now," they say, "we shipped 12 per cent. of our crop during those months last year; let us retard our shipments to 16 per cent. for those months this year and take advantage of those higher prices." They would be very unwise if they decided to hold over on 30 per cent., for other associations might be planning the same move, or a general underestimate of the crop might cause the prices in those months to be lower instead of higher than the average. After taking everything into consideration the board may conclude that it is advisable for the association to pick and ship 10 per cent. of the estimated crop during January. Therefore they order a January pool, and the manager notifies the members that they are to be prepared to furnish 10 per cent. of their estimated crop to that pool. That is, if a member has estimated his crop at 5,000 boxes he is told that the packing house will expect 500 boxes from him during January.

At the next meeting the board will discuss whether the crop gives indications of having qualities which tend toward good holding on the trees or whether it would be advisable to move it as rapidly as possible. Also the market may have shown a definite preference for large sizes. Again taking into account shipments from the whole producing area, the condition of the market and the preferences of members, the board may decide to ship 15 per cent. of the estimated crop during February, picking principally the large sizes. And so on through the fruit year, the board and manager follow the rapidity of movement of the crop, the manner in which the fruit is standing up, the condition of the market, and on these data determine upon a course which in their judgment will bring the greatest money total to the association at the end of the year.

Though the by-laws provide that the association shall become an integral part of the exchange system by joining one of the district exchanges which is a member of the central exchange, they also provide that these latter organizations have no legal power to contract debts binding on the association without the consent of the directors. This rule simply means that the members intend to maintain full control over all expenses and that if the costs of the district and central exchanges should be believed to be excessive the association could withdraw at the end of any year without the danger of having debts piled up against it by the other organizations.

Much more important is the rule which governs the power of directors over injured fruit. This provision has a thinly veiled reference to frozen fruit and windfalls. Over such fruit the power of the board is plenary, and with entire justice, because an association cannot afford to risk its reputation for a high grade article by being compelled to accept inferior fruit for shipment under the association's brands, even if its rejection is an undoubted hardship on the unfortunate member. At times there are high winds which sweep through narrowly confined areas and beat more or less of the fruit off the branches. Obviously it is unfair to the uninjured growers to sell these culls as the output of the association, even if they are all put into low grades. With frost the difficulty used to be much more serious. A few oranges of a man's crop might have been frozen and the vast majority have remained sound, but as there was then no way to distinguish the good from the bad except by cutting the fruit the entire crop would have to be condemned.

Happily, however, a separator has recently been perfected which infallibly detects the frozen fruit, and there is no longer any reason for rejecting a grower's crop as a whole. Since a member of an association usually has no other packing connections, the association will pack, if he so orders, rejected fruit of any kind for a member at a fixed charge a box and allow him to try to dispose of it on his own account. The association's name must in no case be used in connection with such shipments. As a result, since few growers could command the machinery necessary to ship on their own account and as it probably would not be profitable anyway, most fruit rejected at the house finds its way to the dump or is sold at very low rates to peddlers who sell it in the cities.

Owing to the system of pooling ordinarily adopted by citrus associations accurate bookkeeping becomes very important. At present there is a movement on foot which contemplates a uniform system of accounts for all the associations within the exchange. Such a step is wise, as no local individuality would be lost and complete comparability among all the houses would be gained. Then if the showing of any house was not up to par, the members could know at once either that the manager was incompetent or that their own cultural methods were at fault. The associations do not try to surround with secrecy either their methods or the results obtained. A member is at liberty at any time to inspect the books and correspondence of the association; and at the end of the fruit year the volume of business handled by the house, the total and average prices received, the unit packing costs, and any other items of interest receive full publicity in the papers. This candor on the part of the associations must receive the most unqualified approval, for there is little opportunity for chicanery and bad faith to start their corroding work as long as everyone is not only free to inform himself of all business activities, but the association even takes pride in publishing its accomplishments.

Under the non-profit form of organization any producer of citrus fruits within the territory declared eligible by the directors may become a member of the association by paying his proportionate share to the investment and subscribing to the by-laws and contract. When the association is organized as an ordinary stock corporation a rule like the following, Article VII of the by-laws of the LaVerne Orange Growers' Association, is typical:

> No person can ever hold stock in this Corporation who is not engaged in the culture of citrus fruits. . . . The sale, issue and the transfer of the stock of this Corporation shall at all times be in the hands of the Board of Directors and under their control, and no stock shall be issued or transferred to any person without authority for such transfer being given by resolution formally adopted by the said Board of Directors.

Though this provision might point toward exclusiveness of membership no such result is to be observed in practice. It is simply a safeguard of the association for securing complete control over its own membership. While the ownership of stock gives a legal right to dispose of it, the danger of stock falling into undesirable hands is eliminated if the directors must pass on each sale of new stock or transfer of old and if each share is issued against a particular orchard designated in the certificate. There is rarely any hesitation about accepting an applicant for admission, provided his grove is properly tributary to the association in which he has made application. On the contrary all associations are constantly on the lookout for new members, as a large volume of fruit tends to reduce the unit packing charges and added acreage lightens the acre apportionment of investment tied up in the packing plant. Because of the machinery requisite for the expulsion of a member or for the rejection of his crop if worthless, there is little disadvantage and much of positive advantage in having a wide open membership.

Some associations do very properly deny membership to some who would like to join. But they do this, not by discriminating against individual growers, but by drawing lines of demarcation which separate areas which they are willing to include from areas subject to frost or other injuries which in the judgment of the associations make the fruit grown on those areas an unsatisfactory risk. No person has just cause for complaint merely because an association with a reputation for superior fruit decides that the district in which his grove is located is not able to produce fruit of equal quality and therefore declines to extend the privileges of membership to orchards in the less advantageous region. More associations, however, adopt the philosophy that inferior fruit takes care of itself automatically through the grading regulations, and that growers geographically tributary to a packing house should not be excluded from membership. For even the fruit of poor growers is going to be shipped, and it will do less damage to the interests of the growers as a whole if sold through the association than if left outside, possibly to come upon the market at unpropitious times.

A rule against receiving new members, except purchasers of groves already shipping through the association, or allowing disgruntled members to return during any fruit year is quite expedient. After a house has made its plans for handling a given quantity of fruit and has bought supplies accordingly, it is not fair to previous members to imperil the efficiency of the organization by forcing a readjustment through the inclusion of additional acreage. Then, too, if joining at any time during the year were permitted a situation like the following might easily arise: A grower would decide to look around and see what offers he could get for his crop or how he would fare by consigning a car or two, intending if the results should prove unfavorable to retreat to the shelter of the association. Let us say that he has procrastinated until the first part of March without selling any fruit. By this time the associations have probably sent forward 25 per cent. of their estimated crop, knowing that even distribution for the greatest possible number of days is the only way to sustain the market during the later months. Moreover, though it is necessary to move part of the crop in January and February, these months are apt to show low prices. Would it, then, be just to let a man who had refused to ship a portion of his fruit for the sake of helping maintain the market gain by so doing, because he had his whole output in reserve, over those who had borne the brunt of the fight?

The very fact that the applicant had any fruit at all to handle, assuming that he had shipped as large a percentage of his crop as the association, would inflict hardship on the members by disturbing the equilibrium of the estimate of the total amount of shipments on which so much depends. If a house having 400 cars to ship had planned to ship half its output by April 1 and then should admit a grower who would furnish twenty cars, it would find itself not with 50 per cent. but with 55 per cent. of the original estimate yet to be marketed. Obviously, he must be excluded for the remainder of the season, be made to shift for himself and bear the consequences of his selfishness.

Though entering and leaving an association is a simple matter there is nothing indefinite about what is required of a member during any fruit year. He is compelled to deliver to the association's packing house every box of fruit grown on the groves entered in the association or pay damages of twenty-five or fifty cents for all fruit not so delivered. Such drastic provisions are essential unless the association wishes to invite disaster. After buying supplies enough to pack a certain quantity of fruit, after organizing the picking, packing and office force on the expectation of a certain output, an association cannot permit itself to be left in the lurch by desertions. Enlistment in coöperation must be voluntary, but once the campaign is on those showing the white feather deserve no consideration, and should be whipped into line.

The legal status of this provision for liquidated damages to be paid to the association when a member refuses to deliver his fruit is somewhat uncertain, and there is a question as to what would happen should a case come before a court. An owner in a corporation cannot be penalized arbitrarily, and this provision about liquidated damages therefore specifically states that it is very difficult to determine the exact extent to which the association would be damaged by the refusal on the part of a member to deliver fruit. So twenty-five or fifty cents a box is adopted as a reasonable estimate of the injury and is acceded to on the part of both association and grower.

In the early days of the cooperative movement buyers and shippers would try to lure members away by offering them a few cents a box more than they thought they might get through the exchange. But very few buyers could afford to pay twenty-five or fifty cents a box more than the exchange was likely to command, and this much was necessary before the member could be seduced away from his association. Even yet, such a provision against desertion is desirable, for when the market breaks badly, as it is almost certain to do at some time in the year, and a few cars are sold at little profit or at a loss some members are easily panic stricken and might withdraw on the spur of the moment were it not for the sobering effect of that impending twenty-five or fifty cents a box.

CHAPTER VI

ORGANIZATION OF PRODUCERS IN THE CALIFORNIA CITRUS INDUSTRY

Thus far in the description of the actual operation of a citrus association the methods of procedure have been broadly typical of all, but on the following point the greatest difference exists both in principle and in practice. This point is the power of the association over the picking and delivery of fruit. Of course, all associations specify that the fruit must be carefully picked, hauled and handled and that fruit not so treated is subject to fine or rejection. But shall the associations, as represented by the directors and manager, or the individual grower decide the times of picking and the amounts that shall be picked?

The following quotation, Article XIV, By-Laws of the LaVerne Orange Growers' Association, is indicative of one policy:

> Each stockholder in signing these By-laws gives this Corporation the sole and exclusive right and control to pick, grade, pack, mark and sell the citrus fruits . . . raised and grown by him (or her) on the lands described in his (or her) certificate of stock, and this Corporation shall take and handle said fruits whenever they are in proper condition for such purpose. . . . Such fruits shall be delivered at such packing house or packing houses as this Corporation may lease, own or control, at such times as the Board of Directors may from time to time designate. For any failure on the part of the stockholder so to deliver his fruit . . . he shall pay . . . the sum of fifty cents per box . . . as liquidated damages.

It is evident that this association has reached the conclusion that the directors and manager can calculate the time of picking and the most profitable quantity, sizes and varieties to be picked for members better than the members can do these things for themselves. If the members did not believe that in the long run they would get larger returns for their fruit by pursuing this course they would obviously not delegate power over their crops to the association. In citation the rule appears more uncompromising than would probably be the case in practice. When for any reason a member wishes to contribute a larger or smaller percentage of his crop to any pool than is likely to be determined upon by the directors he has the privilege of filing such application with the directors before the pool opens, and the directors are likely to act favorably on the application unless there are specific reasons to the contrary. But the important point to remember is that when a difference of opinion about deliveries does arise, the directors hold the final authority over the fruit and can compel a member to comply with the association policy.

On the other hand some associations adhere to the idea that the grower himself should decide when to ship his fruit and that the function of the directors and the manager is simply to see to it that the fruit when delivered is properly and efficiently packed; in short, that if a member chooses to deliver his whole crop in the same month or the same week he should have the right to do so. According to this plan the association's authority does not extend beyond the packing house: it takes rather than gives orders. Instead of being notified that the association picking crew will be at his grove at such and such a day to pick a certain number of boxes, the member must provide his own picking force or do the work himself. Under the first plan the owner of a grove cannot even join in the labor of picking his own fruit without the association's permission; in the second case the association cannot pick an orange without the owner's permission. It is the familiar argument: "Do other people know how to run my business better than I do, and am I to be dictated to on my own ranch?"

A rigid interpretation of the rule providing for cooperative picking might inflict hardship on a few members. A grower with five acres or so could easily pick his proper quota for any pool, particularly if he had two or three sturdy boys, and his financial condition may make it imperative that he do all of his own work. Assuming that on five acres he might pick 2,250 loose boxes and that the association would charge four cents a box for picking, this man would save a money outgo of $90 by doing his own work. Economy is not an outstanding characteristic of the citrus growers, and many owners even of small groves take it as a matter of course that the fruit shall be gathered by hired labor, but occasionally a member wishes to do his own work. Is there any reason for forbidding such a member to do so?

Picking oranges or lemons can be done by anybody, but it cannot be done properly by anybody. To clip a smooth short stem without causing an abrasion of the skin is not easy, nor is it entirely simple to transfer the fruit from picking sack to lug box without bruising. Pickers must be carefully trained and constantly watched if the best results are to be obtained. Now the ordinary grower or farm hand does not possess this special training. Consequently his fruit does not come to the packing house in as good condition as the fruit picked by the association. But what of it? Does not the grower himself have to stand the loss occasioned by his own inefficiency? If he did, there would be little purpose in trying to force progressiveness upon him. But his punctured and bruised fruit is mingled in the pool with the sound fruit of others, and when as a consequence of his careless picking the cars in which his fruit goes forward show an excessive percentage of decay and are discounted by the trade, he does not bear the whole damage of his misdeeds, but it is distributed over the entire membership. Indeed, the larger growers, who invariably employ the picking crew, have to assume the bulk of the loss, as their fruit constitutes the majority of the shipments. Thus it seems that control of the actual picking should be delegated to the association, for the good of the very grower who objects to it, as well as for that of the others.

Another reason for having the picking absolutely controlled by the house is because oranges cannot be treated as merely so many units of a homogeneous commodity. In most fruit and vegetable industries the large fine specimens bring better prices than the smaller, but this does not hold for oranges. At certain times the trade shows a preference for the larger sizes, and at other times for the medium sizes. With centralized control of picking a manager can watch the market and see what sizes of fruit are commanding the best prices. Then he can order his picking foreman to have those sizes selected in a rough way, as the crew goes through a grove. Under individual control a grower has no very definite knowledge about the demands of the market, and simply delivers oranges instead of large oranges or middle sized oranges or whatever will best please the trade.

Some managers make sizes their specialty and indeed attribute a large proportion of their success to their ability to anticipate what sizes are going to be most in demand at different times in the various markets. A concrete illustration would be something like this: During January and February the New England territory might seem to prefer large fruit (this is actually the case), so the manager figures out what percentage of his cars shipped during these months usually goes to New England. Then he sees to it that enough relatively large fruit is on hand to load that number of cars with excess percentages of the larger sizes.[1] This plan has several advantages. First, the tree is relieved of part of its load and may devote its strength to the fruit that is left. Second, large fruit is apt to become coarse sooner than the small fruit tree does if left on the trees, so gathering it early improves the average quality for the season. Third, smaller sizes are very often preferred over the large during the latter part of the season, so getting the large fruit out of the way may forestall later discrimination. True, picking to size is more expensive and more troublesome than taking the fruit as it comes, and that is the very reason that individuals cannot be trusted to do it. But the cent or fraction of a cent a box that is added to the cost of picking is likely to be far more than recouped through pleasing the market.

Some growers who concede the reasonableness of having the fruit picked by experienced gangs deny that it is proper for the association to determine the quantity to be picked at any given time. This controversy affects much more vitally the framework of the coöperative organizations. It is, in essence, the old controversy between centralization and decentralization. A complete answer to this problem will have to be deferred until the exchange system as a whole has been described, but at this point a few aspects of the controversy are pertinent. First, what are the effects of adopting the method of individual initiative? In this case the association merely exercises the function of an agent: it receives the fruit which is picked at the pleasure of the grower, packs it, and turns it over to the selling agency. No particular marketing policy can be worked out if the grower has complete freedom of delivery. If a half way policy is adopted and the directors have the power to designate pools to which they advise that certain percentages be contributed many growers will take the advice, and a beginning can be made toward a marketing policy. Complete independence of the grower is a possibility, and such independence was the common method of procedure during the early days of the cooperative movement. As an example of the difficulties this system involves, however, it is evident that an association could book few orders for delivery at specified dates, for if members did not happen to bring in fruit at the proper time the orders that had been taken could not be filled.

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[1] The trade regulations in regard to the "standard car" make possible considerable variation in the percentages of the various sizes of fruit contained in the same car. "Standard car" is a somewhat variable term in different years, but, in general, a car of oranges is expected to contain not more than 10 per cent. each of the 96, 112, and 250 sizes and not more than 20 per cent. of the 126 size. The remainder of the car, or 50 per cent., may be divided at will among the 150, 176, 200 and 216 sizes. If a car contains an excess of the 96, 112, 126 or 250 sizes above the percentages noted for the standard car, the dealer who buys the car at a given price a box expects a discount of twenty-five or fifty cents a box on the excess. He also expects a discount of fifty cents a box on all boxes of the 48, 64, 80, 288, 300, 324, 360 and 420 sizes. Cf. U. S. Department of Agriculture, Bureau of Plant Industries, *Bulletin No. 123*, p. 18. In short, the very large and very small sizes are discounted by the trade. But if a given market demands large sizes, for example, an excess percentage of those sizes above the amounts permitted by the standard car may not be discounted. Hence arises the opportunity for a manager to employ marketing strategy in connection with sizes.

When the association controls the movement of fruit the situation is quite different. Now a definite campaign can be mapped out, and the directors can decide in advance, subject to revision according to the vicissitudes of the season, what fruit shall be shipped, and when and where, so as to obtain the maximum returns for the crop as a whole. Under the individualistic system the sale of a few cars at high rates will cause an influx of fruit to the packing houses and will inevitably result in a congested market. Under the centralized system a strong market does not materially alter the season's plans. At most a few readjustments are made and the plant is speeded up a bit. Under the first system low prices at the first part of the season would mean small shipments and in fact shipments might be retarded so long that low prices would obtain for the entire year through an overloaded market during the later months, for after a certain time the fruit must be sent forward, low prices or not. Under the second system, even with low prices ruling at the first of the season a due proportion of the crop would be moved, and this might bring about a very strong market during the later months. In this case the average prices for the whole year might be reasonably satisfactory, while under the first plan the results would be disastrous. The spurious independence achieved by a grower's retaining the pride of authority over his own shipments is too dearly bought when the disruption of orderly scientific distribution is the price paid. Neither are half measures sufficient. Cooperation has not shown its full possibilities until an association has entire control over its output and can enter the lists to build up a constituency of regular customers in the markets, in the same manner that any other efficient and successful business proceeds.

Cooperation is, to a large extent, an attitude of mind: it is the ability to take a fair minded view of a whole situation. The individualist sees his immediate advantage; the true cooperator sees his advantage only as a part of the welfare of the whole industry or even society in general. The individualist sees nothing wrong in trying to calculate in what particular week of the season the market will reach its maximum and aiming to have his whole crop there at that time; he does not pause to reflect that if everyone followed the same course there would probably be no citrus industry. The cooperator has the fairness of mind to see that if the whole crop is to be sold the market must be maintained even when prices are not attractive, and that it is no more than right that he bear his part of the burden as well as reap his share of the reward. He realizes that his own welfare depends ultimately on the prosperity of the industry as a whole, and he is willing to make his equitable contribution to the support of the industry. In numerous talks with growers these ethical considerations have come out clean cut and with an enthusiasm that was refreshing. Not only do these cooperators adopt the principle of fairness for themselves, but they soundly berate those who seem not yet to have reached the same plane of industrial morality.

Membership in a citrus association continues only during the pleasure of the member. As there is no pressure to bring a grower into the cooperative relationship, neither is there any pressure to continue the ties after he desires their relaxation. This is one of the most attractive features of the whole cooperative movement in California. Those who have worked out the system have had the good sense to realize that weakness and not strength would result to the organizations if members should be retained against their will. In these organizations the only formality to withdrawal is the filing of notice with the secretary during a specified period or before a certain date of any year. Withdrawal of fruit from the association need not completely sever relations between the member and the association. He may retain his equity in the corporation (though not his voting power) and merely not avail himself of its facilities. At any subsequent time he can resume his full privileges simply by stating that he will ship through the association during the following year. Some associations provide that after withholding his fruit for a certain number of years a member's rights automatcially cease, and he is not entitled either to compensation for his contributions to the society or to payment for his stock.

These provisions for withdrawing fruit from the control of the association for a year or more are not mere dead letters. It is the rule and not the exception for an association to have some non-shipping acreage on its books. When for any reason a member becomes dissatisfied and thinks he can do better by employing other packing and marketing agencies he has nothing to do but try. And since it is impossible for an association always to please everybody, somebody is continually deciding to try. As a rule the deserters soon return, and their very defections are likely to prove a benefit to the association, for it should be reasonably clear to an outsider that after a man ships through the association, then through other channels, then returns to the association something besides sentiment is indicating that the cooperative method is most advantageous to the grower.

A more complete description of the methods of grading and making payments will best be left till the pooling arrangements are studied. Now it need only be said that the associations do a strictly cash business, and that growers receive their returns about a month after delivering their fruit. The funds are ordinarily handled through a bank and disbursed on warrants signed by the president and secretary of the association.

Each packing association adopts brands for its various grades of fruit. These brands are lithographed on more or less attractive labels which are pasted to the ends of the packing boxes. For present purposes we may assume that an association has three brands, one for its fancy grade, one for its choice, and one for its standard. Like any other progressive business, the association aspires to win and hold attention to these brands. For that reason the quality in each brand is made as uniform and reliable as possible. The brands are the property of the association, and cannot be used without its sanction. More than once it has occurred that an association has felt that it could not compromise its reputation by shipping under the regular brands fruit slightly below par, but still merchantable, so it has adopted temporary labels not showing the association name and has thus sold its output without tarnishing its good repute with the trade. Recently quite a controversy has arisen over the matter of brands, but this may best be considered with the discussion of the achievements of the exchange system.

All through this chapter passing references have been made to pools. We must now turn to the purpose of these pools, their organization, their effect on the whole cooperative structure. For pooling is without question one of the essentials of the exchange system. In the first place, why should there be any pools at all? Or why not have one general pool instead of several? It is entirely conceivable that each member's fruit be kept distinct, be packed and sold on individual account, and the actual proceeds obtained for his particular fruit be returned to him. In fact, this used to be done somewhat extensively. Now, however, a grower's fruit ordinarily loses its identity after it has been graded and weighed.

Generally speaking, pooling is an insurance measure, and the policy of several pools rather than one is a measure of administrative convenience. The cooperative principle would lose much of its significance if it did not include the distribution of risk. Under the system of consigning or selling to packers the individual account method was tried thoroughly, and was proved a failure. If the prices that buyers on the Eastern market offered invariably were reflections of the quality of the fruit, the individual account plan would be ideal. Efficient growers would be rewarded; careless growers would be penalized. But unfortunately this condition does not obtain. Prices are a reflection of the quantity of fruit that happens to be on the market at any given time much more than of the quality of that fruit. It was to get away from the sight of good fruit returning red ink at one time while poor fruit brought fabulous returns at another that the cooperative enterprises were launched. Under individual account, a grower might face a deficit for the season during a fairly successful year for the industry as a whole.

If every possible precaution had been taken in growing, picking and packing and if the time of shipment had been selected with the utmost care it is entirely conceivable that each shipment of a given individual might fall on a demoralized market. And these might be the only poor markets of the season. Under collective shipment such a condition could not occur. Though all of one member's crop might happen actually to sell below cost he would be affected only to the extent that these low prices reduced the general average for the pool. Insurance against unavoidable risk is too well accepted a principle to need defence, and we may proceed at once to the less obvious advantages and some of the disadvantages of the pooling system.

If each member contributed exactly his proportionate quota every time the directors made a requisition for fruit, that is, if every time the directors decided that it would be advisable to ship a certain percentage of the fruit each member should contribute that percentage of his crop, there would be no particular objection to having but one pool during the season. But for various reasons members do not contribute equal percentages. For example, one member's crop may mature early and he may desire to ship to the holiday market, while another man may have no fruit ready to pick. If the market should be especially good for holiday fruit it would not be fair to wait till the end of the season, strike an average for all the fruit sold during the year and pay each member according to the relation his total number of pounds of fruit has to the total weight shipped by the association. Those members who did not have their fruit ready for the early market would have no right to share the advantage of their more painstaking or more fortunate fellows, and members who did not ship to this market should not be called upon to bear a loss if one has been incurred.

Even in the later pools contributions cannot be exactly equal. After a member has contributed, say, 10 per cent. of his crop to the holiday pool and another has contributed nothing, there is no common base on which to proceed for the rest of the season. If, beginning in January, each should contribute the same percentage at the call of the directors the first would be out of fruit when the second still had 10 per cent. to ship. Then there are often special reasons why a member is allowed to deliver more or less than the general percentage to a pool. Suppose that the directors believe that the best interests of the association require the shipment of 20 per cent. of the crop during March. It is immaterial to them where this fruit comes from, so if certain members want to deliver more than that percentage and others less there is no reason against accommodating both groups. But if all wanted to ship more or all wanted to ship less, then the directors would exercise their authority and require each member to deliver his due proportion of fruit.

Pools have a general tendency to conform to the monthly schedule, that is, there is the January pool and the February pool. But during the rush season of March and April when shipments are very heavy and the market is likely to show wide fluctuations the time of the pool may be shortened. Besides, there are general pools, open pools and voluntary pools. The open pool is most frequently used in connection with odd varieties where but few boxes are shipped during the entire season. In this case all the returns for the season are divided by the total number of pounds sold to find the rate at which members shall be paid. The time of the sale, therefore, is immaterial. Grapefruit, seedlings, Mediterranean sweets and St. Michaels are often handled in this manner. The open pool means that the directors merely specify dates between which growers may deliver as much or as little as they see fit. This arrangement is often used at the opening and close of the fruit season when shipments will perforce be very light. Voluntary pools are little different. To them a member contributes or not as he pleases, but he must not exceed a certain percentage of his estimate. This is a favorite device for a holiday pool.

A pool, then, as the term is used in the citrus industry, signifies the quantity of fruit that is delivered to an association by all members between two specified dates. The fruit does not retain any definite connection with its grower but is commingled with all deliveries and is sold not in the name of the owner but in the name of the association. Hence the owner does not know what price was paid for his particular product and his dividends depend on the relation that the number of pounds of his contribution to the pool bears to the total number of pounds included in that pool. In other words, total proceeds for the fruit delivered to a pool are divided by the total number of pounds to find the rate a pound which the fruit brought; then each grower's share is computed by multiplying the number of pounds he furnished by this rate a pound.

Thus far no account has been taken of differences in the quality of fruit contributed by various members to the pool. Obviously it would be unfair if a producer of fine fruit received merely the same rate for each pound of his crop as a careless grower got for his. The problem is, therefore, how can the advantages of pooling be combined with recognition and reward of efficiency? The answer is found in the grading rules. Growers do not receive a flat rate a pound for all fruit shipped in any pool, but a different rate a pound for each grade, and the rate is only the same to all growers for the same grade. That is, proceeds from the sales of cars are not lumped together. Each grade has a separate account, and only prices for the same grade for the duration of the pool are reduced to a rate a pound. It follows that since the higher grades bring the best prices a grower with a large proportion of good fruit will receive larger total returns than will a poor grower for the same weight of fruit.

This leads to a difficulty that is constantly arising with associations. Members whose fruit continually grades low are likely to become restive, and at times even charge discrimination against themselves on the part of the manager or directors. For it is characteristic of most farmers to believe their individual product equal or superior to that of their neighbors. Then, when one member finds that ordinarily only 10 per cent. of his crop is graded as fancy, while another member secures 20 per cent. fancy, and that the fancy grade brings a substantial premium a pound over the lower qualities, he is much more apt to shout fraud than to hunt for his own shortcomings as a grower. His dissatisfaction may work itself out in two very different manners. If impetuous and unreasoning, he is quite likely to withdraw from the association. If thoughtful and teachable he comes to the conclusion that discrimination against him by the manager would be a short sighted policy and one not likely to occur, and indeed one very difficult of accomplishment even if the manager should have malignant intentions. So the chastening suspicion enters his mind that after all maybe his fruit is not the equal of his neighbor's, and then it is a short step to the determination to improve his cultural methods until his percentages in the higher grades are the equivalent of anybody's. In fact, the policy of publicity adopted by the California cooperative associations allows each grower to know how his results compare with those obtained by others, and there is often keen rivalry within an association to see who can secure the highest percentages in the best grades—a situation wholesome both for the membership and for the association as a whole.

But an opportunity for endless bickering is presented unless the manager's power over grading is absolute and incontrovertible. After the number of grades and the general characteristics of each have been determined by the membership as a whole at the annual meeting or by the directors, the decision of the manager in any specific case must be final, if internal dissensions are to be minimized. Yet even with grading completely controlled by the manager there remains some possible basis of controversy. Within a given grade there is always more or less diversity of quality: some oranges graded fancy will inevitably be superior to others included within the same grade. And one grower's fancy fruit may on the whole excel that of another. For differences in soil, humidity of the atmosphere, altitude and cultural methods all exert their varying degrees of influence on quality.

Moreover, the prices obtained for any grade depend on the average quality of all the fruit included, so if one or two members habitually excel all their fellows in quality they will not receive full rewards for their superiority. The especially fine article merely raises the average price which would otherwise have been received for the fruit at the lower edge of the grade, and the inferior fruit included renders it impossible to obtain the full market price for the superior qualities.

Two results may follow: first, an exceptionally skilled grower may become wearied of continually holding up the market for careless neighbors who are willing to produce inferior fruit, and the skilled grower may allow his product to deteriorate to the general level. Second, a shiftless grower may be content to allow the better fruit of the other members of the association to hold the average prices of the various grades up to a remunerative level. In either case the results are unjust and injurious, for good fruit is the only guarantee of a stable market, and anything that tends to lower cultural standards must be condemned.

However, there is a means of escape from the dangers. If the association is composed of members of similar cultural skill, having groves on similar soils and with similar physical environment, the product will be sufficiently homogeneous to warrant assembling and marketing in common without inflicting injury on any grower. Therefore it is advisable for an association to include in its membership only those growers whose product is essentially similar. If in the same community there tend to be variations in the style or quality of the fruit, as is very frequently the case, it is better to organize two or more associations than to attempt to pool dissimilar fruit under the same brands through one organization. In actual practice there have been numerous examples of a group of growers withdrawing from one association and organizing another because they were unwilling to ship their first class fruit along with the poorer product of others.

Even if there is no special dissatisfaction within the organization it is not wise to let an association become so large that the business as a whole overshadows its constituent elements, namely, the individual members. Unless the personal, enthusiastic loyalty of each member is elicited, hopes for marked success are likely to prove illusory. An association must have a reasonable output or the unit costs of conducting business will be unnecessarily great.

In general, the California associations number between fifty and 150 members, include 300 to 1,200 acres of bearing orchard, and have annual shipments of 175 to 850 cars of fruit. Associations of medium size are often more successful than the large ones.

Most of the discussion of methods of picking, grading and pooling has been based on the practice in regard to oranges, chiefly because oranges constitute 85 per cent. or more of the total shipments of citrus fruits. Now something may be said about lemons. The general principles that should govern a cooperative society of course apply to a lemon association. But it is much more common to find associations that pack both oranges and lemons than it is to find associations devoted exclusively to lemons. On the other hand, numerous houses pack only oranges. Lemons are often raised as an adjunct to the orange business, that is, an orchardist may have a couple of rows of lemon trees as a border around his orange grove, or he may have two or three acres of lemons in a citrus property of ten or twenty acres. Yet there are other growers who devote themselves exclusively or principally to lemons.

Since lemons are maturing all the year through, it is quite common to pick them every month, and divide the year into pools corresponding with the calendar months. Though the association picking gang may at times attend to the picking of a member's lemons, it is not the rule nearly as much as with oranges. Where a grower has but a few boxes to deliver every month there would be little reason in summoning the picking crew, so the grower does the work himself or has it done by men in his own employ. In the handling of lemons there is no real problem about the times of delivery. They must be picked as they mature, hence there is little need for machinery compelling members to deliver their pro rata share. Only when members do not pick and deliver their fruit with reasonable regularity does the association interfere in order to protect the common welfare.

Instead of being shipped as soon as possible after delivery, as are oranges, lemons are put through a more or less protracted process of curing and are sometimes not marketed for several months. Curing is accomplished by storing the fruit under good ventilation at certain rates of temperature and humidity, and is undertaken for the purpose of bringing out the color (most lemons are picked while green in color), for toughening the skin and for improving the keeping qualities. Because of this interval between picking and selling, returns on lemons are not received nearly so quickly as on oranges. Also the fact that the lemon trees must be picked over so much more frequently than oranges and the fact that the fruit must be cured make the unit cost of picking and packing a box of lemons much higher than for a box of oranges. Therefore a house that handles both fruits usually keeps separate accounts, for it would obviously be unfair to the members who grow nothing but oranges to compute a flat unit cost of picking or packing by adding all costs and dividing by the total number of all oranges and lemons handled.

This whole study of picking, grading and pooling may be concluded by assuming a typical case and following it through the various processes. Again considering oranges only, let us say that an association through its board of directors and manager declares a March pool and decides it is for the best interests of all concerned to move 20 per cent. of the crop during that month. The manager announces by telephone to the member that the picking crew will arrive at his ranch at such and such a time to pick 20 per cent. of his estimated crop, and that certain varieties and certain sizes are wanted. It is then incumbent upon the grower to procure from the packing house field boxes and ladders enough to keep the gang amply supplied and to distribute them in those parts of his grove from which he desires the fruit to be taken. He also is responsible for hauling the gathered fruit to the packing house. Then the crew, often Japanese, under the direction of its foreman comes and begins work. Each picker has his own number, which he must place on each box he fills, so that responsibility for careless work can be readily placed. And to encourage the pickers to put quality first, they are often paid by the day rather than by the box. Perhaps four cents would be a fair average of the cost of picking a box when done in this manner. After the same fashion the gang moves through the district picking for each member in turn. Of course, some large houses operate several gangs, and these would not be likely to work on the same ranch at the same time, as the owner would have difficulty in hauling the fruit as rapidly as picked.

With delivery at the packing house the last vestige of control of the fruit by its owner ends. After passing through the washer or brusher, the fruit is carried on belts before graders who inspect each separate orange and decide by color, texture, form and weight into what class it shall go. Passing on, the fruit is automatically weighed and recorded, each grower being credited with a certain number of pounds of each grade. After his fruit passes the scales the grower's identity is lost, for the oranges are carried over automatic sizing machines and into bins in which fruit from many growers may be awaiting packing. The oranges are then wrapped in tissues bearing the association name, and a definite number of any given size are packed in each box; the box is covered, cleated and strapped, and is then ready for loading or for pre-cooling.

Let us assume that a certain grower's contribution to the pool in question was 1,000 loose boxes, averaging forty-five pounds each. Suppose that 16 per cent. or 7,200 pounds qualified for the fancy grade, 60 per cent. or 27,000 pounds for choice, 20 per cent. or 9,000 pounds for standard, and 4 per cent. or 1,800 pounds were thrown out as culls. When all the fruit picked in that pool has been sold the total proceeds for each grade will be divided by the total weight of fruit of each grade to determine at what rate the grower is to be paid. Let us suppose the first grade averaged net to the association $2 a hundred pounds, the second grade $1.75, the third $1.50, while the culls were sold to local peddlers at $.25 a hundred pounds. Our grower's equity in the pool would therefore be $144, plus $472.50, plus $135, plus $4.50, or a total of $756. But the expenses of picking and packing must be deducted before the grower can be paid. At four cents a box the picking would amount to $40, and at thirty-two cents a packed box (1,000 loose boxes would pack about 645 boxes), the packing costs would be, say, $200. The grower therefore would receive a warrant for $516 as his share of the pool.

The rule forbidding the association to market any fruit not furnished by the members needs little explanation. It simply is a preventive measure to keep the cooperative organization from becoming an ordinary fruit speculating concern. The foundations of cooperation would soon be undermined if members had the possibility of buying fruit which they did not grow on the prospects of making a profit by selling it again through the facilities furnished by the association. Profits on growing and not on merchandizing must be the ideal of the growers.

Flexibility is given to the citrus organizations by providing for reasonably easy amendments to the by-laws. In short, the theory on which the associations are built is that no rule should be binding over the members unless it is desired by a substantial majority.

Again the question of transfers of property comes up, showing how important a part it plays in the citrus industry. What would be the status of a crop growing in a grove which a member had entered in an association for the next fruit year if the grove should be sold? Would the new owner be compelled to ship this crop through the association or pay damages even if he preferred to ship otherwise? Very wisely the provision is made that a bona fide sale of an orchard cancels all agreements about the crop, though the new owner if he wishes may assume the certificate of the former owner and ship through the association even though it be the very middle of the fruit year, while a grove that did not belong to a member could not be entered in an association except at the end of a fruit year.

The recall of judicial decisions is adopted as a principle by providing that the membership at any general meeting may rescind any decision made by the board, though the directors' decision is otherwise final.

In conclusion, therefore, the local packing association may be described as a group of growers organized on strictly democratic and cooperative principles for the purpose of marketing citrus fruits and for no other purpose. Some associations are organized as non-profit corporations under the new California law; many are organized as ordinary stock corporations but limit the holding of stock to actual growers and also have some provision like the following, from the Articles of Incorporation of the LaVerne Orange Growers' Association:

> It is fully understood and agreed between the members of this Corporation that it it is not an incorporation for profit, . . . and it is well understood and agreed between all the parties signing these Articles of Incorporation that this is purely a cooperative association.

The tendency within the association is clearly toward more centralized control and toward constantly enlarging the powers of the directors and manager. As the efficiency of the associations is enhanced by this policy of centralization it is to be commended in so far as an autocracy or an oligarchy is not created. Abuse of power is prevented by the initiative, the referendum, the recall, and the recall of judicial decisions, and this popular government is kept virile and effective by keeping the associations from becoming unduly large. In short, popular control and efficiency seem to be reconciled to a marked degree in these cooperative societies.

CHAPTER VII

THE GROWERS' SELLING AGENCY

When the fruit is loaded on the cars the direct responsibility of the local packing association ends, and succeeding operations are controlled by, or at least through, the district selling exchange. It is this second of the three fundamental branches of the exchange system that now demands attention. Like the local association, it is a corporation which is not organized for the purpose of paying dividends. But while the packing association ordinarily has a considerable investment in its plant, the district exchange has but a nominal paid up capital and owns no property except its office fixtures. The principal function of the district exchange is to sell the fruit of certain local packing associations which delegate to it this power. One fundamental fact to be kept in mind is that the district exchange could have no independent existence apart from the associations which constitute its members, but the local associations are entities without reference to the existence or non-existence of district exchanges. Not only is the district exchange expected to devote its chief attention to selling, but it is required to sell in a specified manner, namely, through the facilities that are furnished by the California Fruit Growers Exchange.

It is evident that a district fruit exchange is a rather unique organization. It owns neither fruit nor marketing facilities, yet it may handle hundreds of thousands of dollars worth of business during the year. In the form of organization the district exchange much resembles the local association, but its members or stockholders, instead of being individuals, are the associations themselves. The manner in which district exchanges arise is as follows: Several packing associations in a more or less distinct geographical area unite to form a separate organization which is to sell the fruit of all the member associations. Some of these exchanges have but two or three member associations and one has eighteen, but the average membership is about seven. There are no hard and fast rules for determining the boundaries of the various exchanges, the guiding principle simply being that a selling exchange has a better chance to serve its members satisfactorily if the fruit which it is called upon to market is somewhat similar in general characteristics. However, there is nothing whatever to prevent associations with very dissimilar outputs from forming a district exchange if they see fit.

As was done with the packing association, let us take a typical district exchange and trace through its structure and mode of procedure. The structure need not long detain us. The district exchange has no stockholders or members except one elected representative from each association. All of these elected representatives are directors, and each has voting power on questions of policy proportionate to the number of packed boxes which his association sells through the exchange. The directors of the local association annually elect their director to serve on the district exchange. Frequently the president of the board or the manager of the association is chosen. Consequently the local associations control absolutely the policy of the district exchange, and no policy could possibly be pursued which did not command the support of the associations. For the local directors instruct their representative on the district exchange and are in turn held accountable by the growers for what goes on within the district exchange as well as within their own packing house.

When the representative of the association is chosen the voting power over the association's nominal stock in the district exchange is assigned to him. Then the various delegates organize a new board of directors, electing a president, manager, etc. It follows that the president and all of the directors of the district exchange must be members of some local association, but, adopting the practice of the local associations, the directors of the district exchange do not necessarily elect one of their own number for manager. The manager of the district exchange is so vital to the prosperity of the section which he serves that it would be suicidal to limit in any way the selection for the place. Business ability of a high order is essential, and it must be secured wherever it may happen to be found.

The district exchange is undoubtedly the least understood element of the exchange system, so its structure will be recapitulated before proceeding to its functions. A group of packing associations, say, seven, in a given producing area form a corporation which is to market the fruit for all. Each of these associations, through its board of directors, elects one representative to act as a director in the district exchange. These elected representatives are the directors and only stockholders of the exchange, control its policy for the benefit of their local associations, and are responsible to their respective associations. Each director's voting power in the exchange is determined by comparing the number of boxes shipped by the association which he represents with the total number of boxes shipped through the district exchange.

A basis for further study of the district exchange may best be gained from an examination of the contract between it and the local associations:

Whereas, the system of marketing and handling citrus fruits devised by the California Fruit Growers Exchange has been approved by the parties hereto as a satisfactory system of cooperative marketing. *Now,* in consideration of the foregoing, the parties of the second part [the local associations] do hereby severally agree to market all fruit controlled by them or that may hereafter come under their control during the term of this agreement through said first party [the district exchange], it being understood and agreed that the said party of the first part has entered into an agreement with the California Fruit Growers Exchange for the sale of said fruit in accordance with the general plan adopted by said exchange, to which plan and agreement reference is hereby made, and the same is hereby made a part of this agreement.

The said party of the first part is hereby authorized to retain as brokerage, from the net proceeds rendered to it by the agents of the California Fruit Growers Exchange, or from any other sales of fruit under this agreement, such sum of money as their Board of Directors may from time to time designate or deem sufficient to cover the expense incurred in making such sales. Should the actual expenses incurred by the said party of the first part during the term of this agreement amount to less than the fund derived from the brokerage so retained, then the surplus shall be refunded to the said parties of the second part, according to the number of boxes of fruit shipped by each. . . . Oranges, lemons and other citrus fruit, as well as auctions and agents' sales, may be assessed on a separate basis, and for different amounts.

Provided that whatever difference, if any, is made by the California Fruit Growers Exchange in its charges for marketing oranges, lemons and other citrus fruit, respectively, shall be followed and carried out in the adjustment of moneys retained by the party of the first part from the said parties of the second part.

The party of the first part agrees to use its best efforts to sell and dispose of the fruit controlled by the said parties of the second part, but it is expressly understood that in so doing it acts only as the agent of the said parties of the second part, and assumes no responsibility or financial liability therefor further than it agrees to turn over to the several parties of the second part, the cash proceeds of all sales of their fruit as soon as received, retaining the brokerage for expenses, as above provided.

The parties of the second part further agree to pay to the party of the first part as liquidated damages the sum of twenty-five cents a box on all citrus fruits controlled by them, which, through any fault of their own, they fail to deliver to the party of the first part, loaded on cars at shipping station of said party of the second part.

. . . Provided, that any of the parties hereto may withdraw from and cancel this agreement during the first fifteen days of August in any year, by giving notice in writing during said period to the party of the first part.

As indicated in the above agreement, the operations of the district exchange are so intimately connected with the activities of the California Fruit Growers Exchange that an explanation of most of them must perforce be postponed until the latter organization is described. However, a few points in the agreement call for discussion. First, it should be noted that the agreement is between corporations and not individuals. In fact, the district exchange is a kind of reversed holding company, for instead of the holding company controlling the constituent corporations, in this case the constituent corporations control the holding company.[1] Yet in practice the district exchange often determines the disposition of the greater part of the output of its component units, just as an ordinary holding company would do.

The district exchange is authorized to retain from the proceeds of fruit sales a brokerage sufficient to pay the expenses of its operations. Such a stipulation involves several implications. It suggests that the district exchange makes sales and receives the proceeds. But on the manner of making sales and on the extent of the authority of the district exchange over cars owned by the local associations nothing is implied. And indeed in these matters the greatest diversity of practice exists. Since the district exchange is a creature and not the creator it can have no power beyond that which is delegated by each local association. Within the same district exchange, moreover, one association may delegate more power than another: one may merely ask for advice from the district exchange in determining for itself the times and places of shipment; another may look to the district exchange for the decision of these matters. One association may not permit the consummation of any sale without its previous consent; another may delegate to the district exchange the power to accept or reject offers on its own responsibility. In all cases, however, sales are made through the district exchange: that is, sales are in the name of the district exchange, for the account of the local association. Therefore all proceeds are forwarded to the district exchanges for distribution to the associations, no matter what degree of selling authority the associations have conferred upon the exchange.

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[1] Of course this comparison with the holding company is merely an analogy, for the district exchange owns no stock in the local associations. On the contrary, the local associations own all the stock of the district exchange.

The brokerage which the agreement permits the district exchange to retain is not a percentage of the selling price of the fruit, for such a plan would make some associations pay at higher rates than others. Poor fruit always costs as much to sell and usually more than good fruit does, and it would be manifestly unfair to penalize associations with superior products by retaining the same percentage of their high prices as was retained from another association's low prices. Instead, the total expenses of the district exchange are computed and divided by the total number of boxes sold through the exchange by all associations to find a common flat rate a box, which is then retained from the proceeds for the account of each association. The cost of the district exchange to its member associations averages about one cent a box.

During the shipping season it is of course impossible to estimate what the exact total cost of the exchange is going to be at the end of the season. But the district exchange has to meet its obligations as they arise, so a flat rate a box is calculated which is expected to approximate as closely as possible the actual rate, which can only become evident at the end of the year, and this estimated brokerage is retained from all shipments during the season. The rate is ordinarily made high enough unquestionably to cover the exchange's expenses, and at the conclusion of the fruit year any surplus above actual costs is distributed among the associations on the basis of the number of boxes shipped. If the calculated rate of brokerage has been too low, each association is assessed a uniform rate according to the number of boxes shipped in order to meet the deficit. But such assessment is almost never necessitated.

There are, however, very different costs involved in selling different varieties of fruit and also in selling by different methods. On lemons, for example, a higher rate is assessed than on oranges, as the boxes are one-sixth heavier, so it would be unjust to an association shipping oranges only if a uniform rate was assessed by the district exchange against all the fruit handled, this total including both oranges and lemons. Clearly, too, a car of fruit sold through the efforts of the agents of the California Fruit Growers Exchange has cost more for selling than a car merely placed upon the auction market or a car that without solicitation on anybody's part has been ordered by an Eastern buyer from a packing association. Consequently, a different rate of brokerage is retained for oranges and for lemons, and the agreement permits a different rate for auction and for agent's sales. The flat rate for all associations, therefore, is intended to apply only to the same kind of fruit sold in the same manner.

The agreement makes it clear that in the handling of fruit the district exchange acts only as an agent and not as a principal. It must use as much discretion and diligence as possible in the sale of fruit, but it does not guarantee to obtain any minimum price or to sell the fruit at all. As the district exchange has practically no assets an association has no recourse against it if cars are damaged in transit or if they fail to find buyers when the market is reached. All this might look as though the district exchange is merely a kind of commission firm to which the growers through their packing associations consign their fruit. Indeed it might even seem that a district exchange is a particularly malignant exemplification of the consignment plan, for each member association is by the agreement compelled to turn over all fruit to the district exchange for marketing or else pay damages on every box not so delivered; and the district exchange is guaranteed against loss by the provision for retaining adequate brokerage, while a commission merchant may lose money if he fails to receive consignments.

In reality the points of similarity are quite superficial. True, the district exchange can force the associations to turn their output over to it. True also, its expenses are guaranteed by the brokerage arrangement. But a commission firm does business for profit, and in order to secure profit sometimes resorts to the most reprehensible knavery. It may sell to itself or to a dummy for a low price so as to make an illegitimate profit on the resale. It may juggle accounts so as to withhold more than the stipulated commission. Both of these things took place before the development of the cooperative distributive system. But the district exchange is not attempting to make profit for itself: by its very organization it could not possibly make profit, for it is only allowed to retain enough from sales to cover actual expenses, and what that brokerage shall be is periodically determined by the board of directors, each of whom is the representative of an association from whose fruit the brokerage is to be withheld. Besides, the principal items of expense of the district exchange are salaries and telegraph charges, which cannot easily be concealed or manipulated. This statement of the kinds of expense which the district exchange has to meet precludes the possibility of profits, for there are no contingent incomes, the stock of the exchange is only nominal, and what little stock there is belongs to the associations. Neither does the district exchange have the slightest inducement toward sharp practice. Nobody connected with the exchange could make anything by it, and any attempt would be like trying to cheat yourself.

The commission merchant's profits are greater the higher the price he obtains for his client; the district exchange retains a flat rate a box no matter what the price. From this angle it might seem that the district exchange has little incentive to work for advantageous sales. The commission merchant will lose his clientele unless returns are satisfactory, but his methods of procedure cannot be affected by the desires of those who turn their products over to him. In short, the consignor may change commission firms, but he has no authority over the firm which he does select. According to the agreement, associations cannot refuse to sell through the district exchange, at least during any fruit year, but if the manager and other officers of the exchange are thought to be inefficient they may be removed. Moreover, the sales policy and procedure of the exchange are dictated by the shippers through their representatives, and are not controlled by the agent as in the case of a commission merchant. In short, associations cannot change selling agents, but they have complete authority over the selling organization because they in fact own their selling agency. Hence, a district exchange manager has as great an incentive for efficient service as has the manager of a manufacturing corporation. The general policy is determined by himself and his board of directors, then both his position and reputation in the citrus world are made to depend on successful execution of this policy.

As in the agreement between growers and their association, the associations agree to ship all their fruit through the district exchange of which they are members or else pay damages on each box not so shipped. The provision is necessary for much the same reasons. After an exchange perfects its organization to handle a certain quantity of fruit and maps out a campaign for distributing that quantity in time and place, it would patently be unfair both to the district exchange and to the other associations if one or two disgruntled associations should decide arbitrarily to withdraw. Unsatisfactory or even disastrous prices are an inevitable phenomenon in parts of each fruit season. The district exchange is in no way to blame for them, and at such times timorous or selfish associations must be reminded, by means of the crop agreement, of the damage caused by their failure to deliver fruit. Though some associations reserve a measure of control over sales effected through the district exchange, no association is at liberty to ship through other channels than the district exchange unless it obtains the sanction of the district exchange.

An important proviso in connection with the damage stipulation for not shipping through the district exchange is contained in the clause, "which through any fault of their own, they fail to deliver to" the district exchange.

This clause has reference to another important function performed by the district exchange. The exchange represents the associations before the railroads and orders cars as they are needed by the association manager. In former years, a shortage of refrigerator cars was of quite frequent occurrence at certain seasons, and it was sometimes impossible for the district manager to secure the necessary cars. If in some manner an enterprising association manager located a few cars or was able to make some sales to buyers who could furnish their own cars it was felt to be unjust to forbid him to sell fruit just because the district exchange was unable properly to perform its duties. Recently little difficulty of this nature has arisen, the district manager can obtain all the cars he desires, and the proviso in question has lost much of its significance.

One fundamental point of difference between the procedure of the associations and that of the district exchange is in regard to pooling. Within an association the fruit of the members is usually pooled, but within the district exchange the fruit of the member associations is never pooled. Each association receives the prices which its particular cars bring without any reference to what prices cars of other associations in the same exchange are bringing. The brands of the associations sell on their own merits, and brands from two different associations are never shipped in the same car. Again, let it be emphasized that the district exchange acts only as an agent, that it owns no fruit, and that it has no brands of its own.

Again like the associations, the district exchange does not attempt to retain its membership by compulsion. At the end of any fruit year an association may inform the district exchange that it withdraws from its obligations to the exchange. While a member association can thus refuse to avail itself of the facilities of the district exchange, the exchange could not possibly refuse to market fruit from one of its members, for the exchange is the property of the associations and must act according to their pleasure. In actual practice, just as a group of growers, members of associations or otherwise, may decide to form a new packing organization, so members of district exchanges and independent concerns may decide to form a new district exchange. Or a member of an exchange has the power of withdrawing from one exchange and joining another already established, provided the latter is willing to receive it. Another cause for withdrawal might arise even although an association was not at all dissatisfied with the policy or management of its exchange. With the extension of the producing area and the creation of new packing associations a district exchange might become so large that division into two exchanges would be expedient. For a district exchange can achieve better results if the product it is called upon to market is broadly homogeneous.

Probably the most vital question in connection with the district exchange system and the one discussed most frequently and with the greatest difference of opinion is the proper scope of the district exchange's power. Before entering upon the controversy, however, this point should be clear: the district exchange has absolutely no power except what is granted to it by the local associations. Though the exchange may advise the associations that it would be to their advantage if the authority of the exchange were extended, the final decision as to granting or withholding the power rests exclusively with the several member associations.

Some associations believe that the functions of the district exchanges should be quite narrowly restricted. Indeed some associations do not believe that there should be any district exchanges at all. But as long as they do exist they are to be tolerated, though not allowed to take more than a subordinate part in the work of distributing the citrus crop. These associations recognize the convenience of having a district exchange to order cars, to act as intermediary between themselves and the California Fruit Growers Exchange and to be a kind of clearing house for general marketing information. They also concede that it may be advisable to have the associations of a given district united in some organization a little less formidable than the California Fruit Growers Exchange. They call a halt, however, when it comes to permitting the district exchange to have an important voice in deciding when or where to ship fruit, or to determine whether to accept or reject bids on the market. These matters, they think, constitute the very heart of the association's existence, and no association should entrust its life to other hands by delegating power over shipments and prices.

Such a philosophy is found in general in the associations which also believe in wide initiative being reserved to the members as to the times and amounts of picking. The manager and board of directors of the association are believed to have a more vital interest in the advantageous sales of their own fruit than a district exchange could have, therefore it is supposed they will handle the marketing problem more successfully. In a word, such associations believe that a district exchange, which owns no cars of fruit and does not depend for its income on securing high prices, will not give all the cars of the various member associations that careful individual attention which the owners themselves would give them; or, if you want your property handled properly handle it yourself. This position is well represented by the following excerpt. The manager of a large citrus acreage is giving his reasons for entering the exchange system:

I assumed that a man who went into the Exchange just packed up his fruit and let it slide and the Exchange did the rest. Instead I found that each shipper in the Exchange has absolute control of his own shipments, can ship when he pleases, can reject offers, divert cars from one market to another without dictation from any one, and these and other rights are exercised more or less fully according to the attitude of the association manager.

In fact, the greatest attraction to me and one of the surprising possibilities, was the fact that by the very nature of things local management of each association has almost everything to do with its possible success or failure.

Under the new arrangements we will apply all the confidential market information; it will be focussed on the 300 or 400 cars shipped by us from Redlands, and scientific salesmanship and distribution thereby becomes [sic] a possibility.[2]

Other associations, on the contrary, believe that the district exchange should have quite ample powers and then be held responsible for satisfactory results. They take the position that a district exchange with its hands tied cannot be expected to accomplish any startling results. The importance of careful and alert salesmanship is by no means minimized, but they think satisfactory marketing can more certainly be achieved by building up a strong marketing agency which can act quickly on its own initiative than by making the district exchange refer all important decisions to the associations for final sanction. In essence, these associations take the position that packing is a technical process and should be controlled by the association manager, but that marketing is a business problem, that it requires a different kind of ability to obtain the best results, and that the association should meddle very little in marketing operations.

If associations confine their activities chiefly to packing fruit they obviously must have some agency in touch with market conditions to advise them what sizes and varieties to ship, when and in what amounts to ship, and where to bill the cars. For this advice they look to their district exchange, taking the view that they can get these services performed and secure this information more cheaply and more efficiently through the district exchange than by attempting to furnish them for themselves. Since the cost of the district exchange averages slightly less than one cent a box, very little additional marketing efficiency need be contributed to more than recoup this expense. But slightly better judgment in distribution or the times of shipment may add 10 cents to the price of each box sold, and the believers in the district exchange system are convinced that the exchange costs immensely less than it adds to the returns of the associations.

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[2] *Redlands Review:* October 4, 1912.

A brief quotation from an annual report of one of the district exchanges which stands for a strong policy on the part of the exchange, that is, for a large delegation of power by the packing associations, may throw this whole controversy into sharper light:

> The . . . Fruit Exchange is your Selling Agency to which you look for advice as to the Time and Place of shipment and whom you hold responsible for your financial returns.
>
> As you do this you should give them correct estimates of your crop, deliver the fruit in good condition, well graded, and *in such sizes and volume and at such times as they desire it.* You cannot pick undesirable small off-sizes when there is no demand for them, nor ask them to market your crop at a time when conditions are unfavorable, and still hold them responsible for the financial returns.
>
> It is the aim and duty of the Management to sell your crop for the most money that can be obtained for it. To do this they must have accurate data as to the amount of fruit to go forward and have it properly picked, packed,

and shipped according to market conditions as they develop. If the Associations and their Members choose to pick, pack, and market the crop according to individual judgment they will of course not hold the Selling Agency responsible for unsatisfactory returns.

The full operation of the district exchange will appear incidentally with the description of the central exchange or California Fruit Growers Exchange. Only another word is necessary at this juncture. An alert district exchange may be one of the chief causes of prosperity, or the reverse, for a whole community. If considerable authority is delegated to it by the associations, the growers are almost entirely dependent on the district manager's astuteness for their welfare. This being the case, the district manager bears a heavy responsibility. Since remunerative prices depend in the long run on marketing high grade and reliable fruit and since satisfactory returns to growers on their investment depend on producing a large yield to the acre of this desirable fruit, a district manager has not realized his highest possibilities if he restricts himself absolutely to marketing problems.

Granted that one of the important functions of the association manager is to try to help his growers improve their cultural methods. But the district manager has a wider outlook than has the local manager, consequently he should be a leader in progressiveness for his entire section and transmit helpful information both as to growing, picking and packing to the growers through the association managers and as far as possible by direct contact with individual growers. He should insist that all fruit sold through his exchange come up to certain rigid requirements; he should train his associations to work for uniformity of product so that a regular, thoroughly satisfied clientele can be built up. In short, the district manager occupies a delicate and difficult position and must be a man of tact, business ability and impartiality. The local associations through their representatives should offer a salary that will command a man of this character, then they should invest him with a wide marketing authority and hold him strictly accountable for satisfactory results.

CHAPTER VIII

THE CENTRAL EXCHANGE OF THE COOPERATIVE ORGANIZATION

The third and in many respects the most important element of the California cooperative structure is the central exchange or California Fruit Growers Exchange. This is the amalgam which holds the system together and gives it power and efficiency. Growers could form associations for collective packing of fruit; several associations could even sell their output through a common agency; but if they stopped there, they would be far short of that highly elaborated marketing machinery which the citrus growers have established in the California Fruit Growers Exchange and which gives the citrus industry of California its unique place in the marketing world. The central exchange is what gives coherence to the efforts toward cooperation on the part of the citrus growers; it gives direction and strength to what would otherwise be an inchoate, inarticulated mass of petty cooperative societies, each too feeble to develop marketing efficiency, and each defeating its own aims by helping defeat the purposes of similar societies.

In 1916 the California Fruit Growers Exchange reincorporated as a non-profit, non-capital stock organization as permitted under the California law. From this time forward, therefore, it will have a new legal form, but since its business operations are being conducted exactly the same as before the change, the form of organization under which the exchange system grew to its present proportions will be described.

In organization, the central exchange down to 1916 much resembled that of the district exchanges. It had a paid up capital of only $5,000 and owned no property aside from office fixtures and the "Sunkist" trademark. It was operated at cost and never paid any dividends on stock. Its stockholders were all directors, and each director represented some district exchange, just as each director of a district exchange represents some local association. The district exchanges designate whomsoever they desire as their representatives on the board of the California Fruit Growers Exchange; sometimes they choose the manager of the district exchange, sometimes one of the directors. The stock of the central exchange was owned by the district exchanges and appeared in the name of the men the district exchanges chose as their representatives on the directorate of the California Fruit Growers Exchange. These directors of the central exchange organize their board and elect a general manager. To this general manager is entrusted the duty of establishing and supervising an efficient marketing mechanism. He it is more than any other one man who sets the pace for the citrus industry, whose policies make or mar the growers' fortunes.

It is evident, therefore, that the organization of the exchange system as a whole is a series of organizations, each kind of organization performing separate functions. The citrus growers unite themselves in packing associations; the packing associations organize and own selling agencies or district exchanges; the district exchanges organize and own the central exchange or California Fruit Growers Exchange, which furnishes the facilities through which the district exchanges operate for the local associations in behalf of the growers. As a whole, the exchange system is strictly democratic. The individual growers elect the board of directors of the local association, this board elects its director in the district exchange, and the board of the district exchange chooses its director in the central exchange. Hence, any question of policy throughout the entire system is ultimately decided by the growers themselves.

Suppose that the board of directors of the central exchange should adopt a policy that failed to command the support of a majority of the growers. At the annual meeting of the local association in the fall some one would offer a resolution to the effect that the association was not in sympathy with this action on the part of the California Fruit Growers Exchange and that the representative of the association on the district exchange be instructed to use his influence against the policy. If a majority of the associations composing a district exchange so voted a majority of the directors of the district exchange would be pledged against the unpopular measure, therefore they would instruct their delegate to the central exchange to oppose it. Finally, if most of the district exchanges should prove hostile there would be no recourse on the part of the directors of the central exchange except to reverse their former judgment and abandon the policy in question.

The original judgment of the directors of the central exchange might conceivably be for the best interests of the growers, but the important point is that by the very nature of the exchange system the growers themselves must be the arbiters of what is for their interest. Nothing can be foisted on them either by the district or central exchange, for these latter organizations are owned and controlled by the growers: they are the servants of the local associations. If the growers see fit to employ local, district, and general managers who are expected to offer suggestions and make improvements, well and good, but that does not mean that these officers can proceed in contravention of the wishes of a majority of growers.

At present the exchange system is composed as follows: Some 8,000 growers are united into 117 local packing exchanges; these are grouped into seventeen district selling exchanges; the seventeen district exchanges are integrated in the California Fruit Growers Exchange. It follows that the average association is composed of about sixty-five growers and that six or seven associations form the average district exchange. There are, also, in the exchange system, fourteen special contract shippers. These shippers are merely packing associations which have no convenient access to any district exchange, and they have no voice in the management of the central exchange. The only way these shippers could affect the exchange policy would be by withdrawal. On the other hand, each district exchange can affect the policy of the California Fruit Growers Exchange in proportion to the quantity of fruit that it sells through the Exchange. That is, a director on the central exchange who represented a district exchange which furnished 10 per cent. of the total Exchange shipments would not have voting power of one-seventeenth but of one-tenth of the total voting power.

What functions the California Fruit Growers Exchange was created to perform and the methods it is expected to employ will best appear from quotations from the contract between the central exchange and the seventeen component district exchanges:

> It has been deemed necessary by the parties of the second part [the district exchanges] to associate themselves together, and cooperate in the matter of developing the citrus industry and marketing its products for the following named Principal Purposes and Objects.
>
> To lessen the cost of marketing by creating Agencies who will act for each member.
>
> To insure the collection of sales.
>
> To facilitate the collection of damage claims.

To encourage the improvement of the product and the package.

To increase the consumption of citrus fruit by developing new markets and to aid in supplying all the people with good fruit at a reasonable price.

To secure a fair and just government of all bodies affiliated with these parties, democratic in principle and through which at all times all policies shall be controlled by the majority will of the shippers connected therewith in just proportion to shipments made. That the business engaged in, being interstate in character, to secure at all times full compliance with the laws of the United States concerning Interstate Commerce, and to that end prevent any organization connected therewith from having any power or authority in contravention of the laws of the United States concerning such business. The general plan being to unite in securing those results which are beneficial to all alike, but at the same time preserving to each shipper complete independence of action as to all of his shipments. . . .

The party of the first part [the California Fruit Growers Exchange] shall be considered the general agent of all the parties of the second part in all matters concerning the marketing of citrus fruit, and such other matters as are incident thereto within the limitations hereinafter provided, with power to provide a suitable place for doing business.

To elect or appoint a suitable official force to supervise the business, at such salaries as may from time to time be considered proper by the directors of the party of the first part.

To employ a force of sales agents stationed at various points throughout the United States, Canada, and such other countries as may be decided upon as will be sufficient to dispose of the products of the second parties in all available territories.

To organize and maintain a claim department for the handling of all claims.

To maintain a legal department to take care of the necessary litigation, and furnish advice to the various organizations connected herewith.

To maintain an advertising bureau for the purpose of stimulating consumption and demand.

To create any other department, or incur any other expense which may be deemed necessary by the board of directors of the party of the first part to protect all those interests of the parties of the second part of a general nature, and which will affect all alike, within the scope of the duties of the first party as herein provided.

It is agreed that all the information obtained by the party of the first part; all of the facilities established by it; all of the books or records maintained by it; all of the Agencies, both general and local, shall always be at all times available to the second parties, or their accredited representatives.

The second parties will at all times cooperate for whatever object may, within the law, be deemed to be for the general good. They will each and all abide by and be bound by all the contracts, agreements and sales made by the party of the first part for any member of such organization, and will promptly ratify any action taken by the party of the first part, or any of its authorized agencies in behalf of any or all of the parties of the second part within the scope of the authority of such agencies.

This agreement shall continue in force and effect until the first day of September, 1920, and during that period the parties of the second part and all associations, corporations, partnerships or individuals connected with such second parties, or shipping through such second parties, or any of them, will ship all their citrus fruits through the parties of the first part and the marketing agencies by it established, and for such period of time will consign all shipments to the party of the first part at some point where the said party of the first part has representation, through and by the local exchange with which each association is affiliated. Provided, however, that any party to this agreement may withdraw therefrom on the first day of September of any year, and be no longer bound by the stipulations herein agreed upon, by filing a written notice of withdrawal with the party of the first part, ten days or more before any such date, and said second party agrees that if it shall at any time during the life of this agreement fail to ship all its citrus fruit as hereinbefore agreed upon, or shall dispose of all or any of it elsewhere, or otherwise than as herein agreed upon, that it will forfeit and pay as liquidated damages to the party of the first part, an amount equal to twenty-five cents a box on all such citrus fruits which are, or may be shipped or sold otherwise than as stipulated in this contract, providing the first party was ready and willing to receive and handle such fruit.

RESERVED RIGHTS OF SHIPPERS

It is understood, however, that each shipper reserves to itself the right to regulate and control its own shipments, to use its own judgment, and decide for itself when and in what amounts it shall ship; to what markets it shall ship; and except at auction points, the price it is willing to receive. Fully reserving the right of free competition with all other shippers, including other members of this organization unhampered and uncontrolled by any one.

First: All fruit, however sold, shall be assessed alike per box in proportion to the Carriers' estimated weight to pay salaries and expenses of the General Manager, General Eastern Agent, and their assistants and all employees, rents and expenses of the Los Angeles Office of the party of the first part, including all telegrams and general items of expense, such as printing, supplies, inspection of fruit, etc.; also to pay the expense of establishing a Claim Department for the purpose of making and collecting claims against Railroad Companies and other corporations and individuals . . . also to pay all necessary legal expenses, including salaries of one or more attorneys for necessary legal advice and all legal expenses necessary to prosecute claims and suits in courts, both Federal and State, and before the Interstate Commerce Commission; also to pay all expenses of proper and judicious advertising . . . also to pay all proper expenses of extending the sale of said fruit in foreign countries, and all other necessary and proper expense that may be incurred in protecting and furthering the interests of the said parties of the second part, excepting that fruit sold by the local exchanges at their expense and risk, either at auction or private sale, at such points as the board of directors may from time to time determine shall be excluded from these charges and assessed an arbitrary charge to be fixed by the board of directors of the party of the first part.

Second: All fruit sold, at auction or on commission, except as hereinbefore provided, shall, in addition to expense named in first paragraph, be assessed alike per box in proportion to Carriers' estimated weight, to pay the salaries and expenses of Agents, Inspectors, and other expenses as may accrue in auction agencies.

All auction and commission charges shall be borne by the respective shipments and deducted from the proceeds of sale of each car or shipment.

Third: All fruit sold otherwise than herein provided shall, in addition to expense named in first paragraph, be assessed alike per box in proportion to Carriers' estimated weight, to pay all expenses connected with the marketing of the same not provided for in subdivision No. 1 of this article, including all salaries, brokerages, office and incidental expenses of the various agents (not including auction agency expenses).

The said party of the first part shall make a statement within thirty days after the first day of September of each year, and a readjustment of such statement once a month, covering all shipments for that season, made up to the time of the statement or readjustment, and levy an assessment on the parties of the second part according to the number of boxes shipped. Such assessment shall be due within three days from date on which it is made. In the event of failure to pay any such assessment within ten days from its date the party of the first part may refuse to handle any fruit for the delinquent party until all assessments past due have been paid.

Agents shall be selected and employed by the party of the first part, on salaries or brokerage, and each shall be required to furnish a satisfactory bond in some responsible guarantee company for the faithful performance of his duties.

The party of the first part shall require its agents to keep it fully informed as to the condition of the market, the arrival and condition of the fruit, the wholesale and retail prices of fruit in their respective districts, and furnish such other information as may be required of them, and such information shall be immediately transmitted by said party of the first part to all the parties of the second part.

No schedule of prices or quotation shall be issued or be distributed by any of the parties of the second part, except through the party of the first part.

None of the parties of the second part shall employ any traveling man, agent, or solicitor for the sale of its fruit.

Copies of all correspondence or other matters in any manner affecting the interests of the parties of the second part shall be promptly forwarded by the respective agents to the parties of the second part whose interests are involved.

The party of the first part shall cause the fruit furnished by said several parties of the second part to be sold for the account of the party of the second part furnishing the fruit, and full report and account sales shall be promptly rendered therefor, and payment of money made direct to the party of the second part shipping such fruit, and a copy of the account sales shall be rendered to the party of the first part.

Each of the parties of the second part shall furnish to the Secretary of the party of the first part an estimate of the number of cars of each variety of fruit controlled by said second party as often as called for by the Board of Directors of said first party.

That whenever in this contract the word "car" occurs, as relating to a carload of fruit, it shall be considered as containing the minimum fixed by the Carriers.

The party of the first part agrees to use its best efforts to sell, market, and dispose of the fruit belonging to said parties of the second part as aforesaid, but it is expressly agreed between the parties hereto that the said party of the first part in the sale and disposal of said fruits acts only as Agent of the said parties of the second part and shall not be held liable for any loss that may result in disposing of such fruit, except as herein provided.

The only losses assumed by the party of the first part are those arising from financial failures or default of purchasers after having positively accepted the fruit, and which default is not due to complaint of the buyer of the quality, condition or grade of the shipment, and these losses shall be assessed to the parties of the second part on a percentage based upon the gross f. o. b. returns for the year.

The party of the first part shall maintain a claim department for the collection of all claims against railroads and transportation companies, and at the request of any of the parties of the second part, the party of the first part shall to the best of its ability, collect and prosecute on behalf of the party in interest any claim for overcharge or loss and damage not herein provided for, and also, upon the approval of its Board of Directors, bring suit and prosecute the same in the courts, all at the expense of the party of the first part.

All matters of business involving the interests of the parties hereto not herein specified, shall be determined by the said party of the first part, or by a meeting of representatives from said parties of the second part, as hereinafter provided.

[The next following section provides for a board of representatives, one to be chosen by each district exchange. The board has supervision over the manner in which this contract is carried out, and a vote of the representatives is equivalent to instructions to the board of directors of the California Fruit Growers Exchange. If demanded, voting power on the board of representatives is according to shipments of the district exchanges.]

Turning to the machinery which the central exchange has established for the performance of its duties as general agent of the district exchanges, we find as the most tangible feature a well equipped general office in Los Angeles, organized into various departments. In outward appearance the Exchange does not differ markedly from any modern business office, but its methods and its sources of authority are fundamentally unlike those which exist in an ordinary mercantile corporation.

On each Wednesday morning the board of directors of the California Fruit Growers Exchange holds its regular meeting. The seventeen directors are the only stockholders of the exchange, so a meeting of the board amounts to a general meeting of the corporation. From the practice of holding weekly meetings it is evident that this board of directors is not a figurehead. Since each director represents a district exchange and since the district exchanges are scattered over the entire citrus producing area of any consequence, it follows that these weekly meetings of the Exchange are in reality a clearing house for the ideas, desires and accomplishments of the whole California citrus industry. At these meetings it is possible to feel the pulse of the growers themselves, for even a local issue of any real significance is certain to pass through the association directorate to the district exchange and thence be transmitted to the central exchange, from which in turn it permeates through all of the associations.

A meeting of the board of directors of a great business corporation is not usually thought of as having much resemblance to a peoples' forum, but the weekly meetings of the Exchange directors are open to any member who cares to attend. Of course only the directors can vote, but any exchange member who has an interest in that particular meeting or has a general interest in the citrus industry may be present and take part in the discussions. Consequently, instead of consisting of a group of seventeen directors, the meeting is a gathering of 100 to 175 who are on hand to hear what is going on in the citrus world. There will be found among this number managers of the district exchanges and local associations, directors of these bodies, and individual growers; in fact, anybody who is seeking information on things citrus. For the purpose of encouraging a large attendance of citrus men at these meetings they are held in a large room at the Exchange offices whose generous dimensions suggest a small auditorium rather than a committee room.

In a study of this kind there is no need of arguing upon the wisdom of the Exchange in adopting this policy of full publicity and genuine democracy. These weekly meetings of the California Fruit Growers Exchange may be named as the chief cause of the outstanding progressiveness of the citrus growers in comparison with other farmers. All of the business and technical problems of the industry come up for discussion and decision. Local viewpoints perforce give way to attention to the good of all concerned. Each grower or manager gets the wisdom of the group to apply on his own problems. More important still, he sees that his problems are not peculiar to himself and that they can best be solved by intelligent cooperation with others who are working on the same difficulties. Then improvements are immediately carried back to the producing districts and can be in general operation before the information that anything new has been worked out could have penetrated to the farmers of an unorganized industry.

Under such auspices, where the men from different sections are meeting so frequently, petty misunderstandings and local jealousies do not flourish. These men discuss their achievements, and it soon becomes apparent to a manager or a grower that there are others besides himself who know something about the citrus business. He even loses his belief that his is at least one grove or packing house in which things are done so well that improvement is impossible. At such gatherings comparisons of results accomplished by the various associations are in order, and a manager soon discovers the fact if his house does not compare favorably with the others in efficiency. He therefore has the strongest incentive toward improvement, for his growers are not likely to look on with equanimity if the manager's performance is not up to par. Without these meetings the growers of an inefficient association would be very slow in realizing that their packing house methods needed overhauling, and the manager would not have the information that would make rejuvenation possible.

Selfishness on the part of certain associations or individuals is another thing that receives scant shrift at these meetings. No grower or manager could attend many of the sessions of the Exchange and hear the necessity of comprehensiveness in marketing, both as to time and place, constantly emphasized and then return to his locality and feel justified in looking solely to his own advantage with no thought for the welfare of the industry as a whole. As the condition of the fruit market and other markets and the general business situation all over this country and Canada are discussed from week to week it is brought home that the citrus industry is not a solitary entity but a part of a complicated economic situation and that business success can be obtained only by making the proper adjustments to this situation. It comes as a sobering thought to many a grower that he cannot honorably try to select the crest of the fruit season for all his own shipments, because if everyone adopted a similar policy the industry as a whole could not hope to prosper. Regular distribution on a merchandizing basis with the willingness to bear a part of the burden as the only legitimate claim to a share of the reward is a principle that finally becomes part of the creed of the association manager. Hence, when he hears at the board meeting that the general market conditions demand that a certain percentage of the crop be sent forward each month if the season as a whole is to be a success, and he knows that his own house has refused to assume its just proportion of the responsibility, his complacency is likely to be perturbed. He goes back to his board of directors and says that in his judgment the time is ripe for increasing the shipments of the association.

Nor can too much emphasis be laid on the advantage that a large body of men interested in the same problems derives from such conferences toward solving these problems. They are put in touch with the latest developments in citrus culture or packing. The work of the State University, the various Federal bureaus, and of individuals is presented, and helpful discoveries are put to immediate and extensive use. While valuable policies are thus worked out through these open meetings, ill considered policies are much more certain to be detected by 100 minds than they would be by those of the seventeen directors only. Members have ready access to the officers of the California Fruit Growers Exchange or at least to their own district representative and have every facility for urging their criticisms or constructive propositions.

The weekly meeting of the Exchange proceeds somewhat as follows: the general manager gives a review of the week's business, touching upon matters both within and without the system that have a bearing on marketing or citrus problems in general. He then outlines certain questions that should come before the directors for discussion or decision. Thereupon the board takes up with the manager any phase of the business, asking him about conditions, gaining further information about his suggestions, or propounding new propositions to him. Business is handled with such despatch and comprehensiveness of viewpoint that little doubt is left in the mind of the observer that here at all events is a group of cooperators where business efficiency is not sacrificed. Then come reports from the heads of the orange sales department, lemon sales department, legal department, field department, or other departments which have pertinent information to offer or plans to suggest. These various reports and suggestions are acted upon as presented, and at the conclusion of the meeting the directors and all in attendance have a definite conception of what has recently happened in the citrus world and what the prospects are for the near future.

When these men go home to their district exchanges and associations they cannot help but mold local policies along broad lines, while without these frequent conferences local issues might easily obscure that intelligent and comprehensive procedure in marketing problems for which the exchange system is noted.

Since the central exchange, like the associations and district exchanges, has a provision that any member can withdraw at the end of any year it appears that the exchange system depends for success on ability to satisfy its 8,000 members and not on coercion. An individual member, an association, or a district exchange uses its own judgment about whether it will remain a part of the cooperative structure or withdraw from it. There are no penalties or losses or formalities involved in severing membership, and one may be quite certain that the people who are in the exchange are there because they believe that it can serve their requirements better than any of the ordinary markting agencies that are available to farmers. This freedom from coercion does not result, however, in an unstable organization. Within the local associations there is some slight instability of membership, a member leaving now and then and an outside grower joining occasionally. The defections do not quite balance the accessions, so the associations are gradually gaining in power and prestige and need not worry over a few trifling losses. Though having full power to do so, an association very seldom withdraws from the exchange system, and no district exchange has ever severed its relation in order to leave the system. Hence the exchange as a whole has a constant and permanent business, although the personnel of the constituent growers is constantly being slowly altered.

There are still other provisions of the contract which demand discussion, but some repetition can be saved by considering them in the following chapter in connection with the achievements of the exchange system. Cooperation in the citrus industry in California, then, arose out of the failure of buyers and commission men to market a constantly increasing output. The principles underlying the whole organization are the distribution of risk and the development of a marketing mechanism that could transfer citrus fruits from seasonal luxuries into staple commodities of everyday and universal consumption. This mechanism is composed of three kinds of organizations: one to pack the fruit, one to sell it, and one to furnish the facilities for selling. The growers own the packing associations, the packing associations own the district exchanges, and the district exchanges own the central exchange. Therefore the growers own the entire exchange system. No outside authority dictates their policies, and their efficient organization is due to their own constructive originality, guided by those aggressive and wise leaders whom they have had the good judgment to secure and follow. There is no feature in the exchange system which is not strictly cooperative—growers, associations, district exchanges, all have an equal standing and equal opportunity in the Exchange. The system is a real marketing democracy.

CHAPTER IX

VALUE OF THE EXCHANGE SYSTEM, MEASURED BY RESULTS IN CALIFORNIA

This sort of a study in cooperative method would be comparatively valueless if it described only the form of organization of the various societies and the functions these bodies are supposed to perform. No matter how splendid the organization, we want to know what it has done and what it can do. If the system of cooperation as worked out by the California citrus growers cannot exhibit a record of actual accomplishments far superior to those obtained through the methods employed by other farmers in the marketing of their crops it has little to offer as one mode of attack on the vast problem of food distribution. How then does an organized agricultural industry carry on its operations, what does it do, what has it done that unorganized industries have failed to do?

It is but fair to take up the purposes of the exchange system as set forth in the contract between the California Fruit Growers Exchange and its members and inquire to what extent each has been realized. The first purpose of forming the organization was to lessen the cost of marketing. How cooperation has furthered the production of citrus fruits need not be considered at this point. Attention will be devoted to processes of marketing proper, namely, packing, transportation, refrigeration, selling and the collection of proceeds. Before the era of cooperation, shippers charged about fifty cents a box for packing. Now an incomparably superior pack costs slightly over thirty cents a box when the fruit is handled by the associations, and independent packers and shippers are compelled to render the service for about the same price or run the risk of alienating their customers. This tremendous saving is chiefly ascribable to four causes: (1) the purchasing of packing supplies at large discounts through a cooperative supply company; (2) the introduction of efficient machinery which makes a large part of the work around the packing house automatic; (3) the regularization of the packing season by giving the manager control over deliveries so that the plant may operate steadily; (4) the elimination of the profits of packing. Since 1894, the year in which the Southern California Fruit Exchange was organized, through 1916, the citrus shipments for the entire industry have approximated 228,000,000 boxes. Let us assume a saving in packing of fifteen cents a box; the total gain to the growers would be $34,200,000. Of course these figures only pretend to be illustrative, but they show how a reduction in cost of a few cents on each box grows to large figures within a short time.

In the matter of railroad rates the individual shipper is at a hopeless disadvantage. He has to accept, without question, the kind of service and the rates which the railroads offer. To be sure, he may refuse to ship and thus escape an onerous rate, but there is never any thought of trying to force the railroads to grant a better one. An organized industry has a much stronger motive for seeking transportation concessions, for its shipments are massed, instead of being scattered out until the saving to any individual becomes almost negligible. It also has the financial power to back its demands and take the necessary legal steps for putting to the test its contention of unreasonable rates or inadequate service. Formerly the freight rate on oranges to the most important markets was $1.25 a hundred pounds. Principally through the pressure brought to bear by the cooperative system the rate was reduced to $1.15 a hundred. The lemon rate has been a matter of continual controversy and litigation, and it will be reviewed in connection with the activities of the Citrus Protective League. It is enough to note here that the carriers have been forced to establish a rate of $1 a hundred pounds instead of their earlier rates of $1.25 and $1.10. These savings of ten cents a box on, say, 17,000,000 boxes a year are no insignificant tribute to the effectiveness of cooperation.

The legal aspects of the refrigeration question will be treated with the Citrus Protective League, but the technical aspects are in order here. About half of the oranges and 12 to 15 per cent. of the lemons go forward under ice. Thus the refrigeration charges of $62.50 to $75 a car to the principal markets amount in a year to a large sum. According to the old plan, the fruit was loaded in the cars, the bunkers were filled with ice, and the car started rolling. From time to time on the journey the ice was replenished. This method did not give complete satisfaction, for the fruit at the center of the car did not become thoroughly chilled for some time, and often the first few days of the journey across Arizona was exactly the period in which the fruit most needed refrigeration if the danger of decay was to be minimized.

Moreover, there was continual difficulty in obtaining the proper icing services from the railroads. Finally it was discovered that if the fruit was thoroughly chilled before loading on the car and the bunkers filled, no more refrigeration would ordinarily be needed on the transcontinental journey. This method is known as pre-cooling and pre-icing. Of course, this form of refrigeration is infinitely superior to the other. However, the railroads offered to perform the pre-cooling and refrigeration service for seventeen and one-half cents a packed box. But some associations found that they could build their own pre-cooling plants, make their own ice, and still pre-cool and pre-ice their cars at much lower costs than railroad refrigeration would entail. Therefore many of the more progressive associations have installed their own refrigeration facilities and are making additional savings through cooperation.

Before the assocations entered the field, shippers and commission men were accustomed to charge 7 to 10 per cent. on the gross sales for selling. The cost of the exchange system for its entire service is never as high as 3 per cent. on gross sales, and this service includes numerous items that could not possibly be furnished by commission merchants. Such a tremendously improved marketing medium has been developed through the cooperative organizations that it would be unfair to attempt to compute the savings that have been effected. Marketing service when applied to exchange methods is really not the same commodity that used to be bought from commission men. Just as in the case of packing, too, the activity of the exchange has forced shippers to lower their charges or go out of business. Perhaps 5 per cent. on the gross sales would be a reasonable estimate of the selling costs of the citrus growers who still consign on commission.[1]

Obviously it is impossible to compute accurately the total of the financial benefits the citrus industry has received through cooperation. When under the old methods 4,000 cars could not be profitably sold and now under cooperation 50,000 cars can be marketed annually it might seem that the total price received for all the cars above 4,000 a year might properly be credited to cooperation. But basing the calculation on the costs of packing, transportation, refrigeration and selling before and during the cooperative era and multiplying by the number of boxes each year shipped by the exchange or by the whole industry, according as the saving applied to exchange members or to all growers, the hypothetical saving effected by cooperation is found to be about $100,000,000. Mr. B. A. Woodford, for many years General Manager of the California Fruit Growers Exchange, probably does not overshoot the mark when he says in a short statement about the cooperative system:

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[1] This is the estimate made by Powell in his report for 1912-13 to the California Fruit Growers Exchange.

> The net result of these changed conditions, reduced to a money basis, shows that the savings that have been made amount in themselves to much more than the growers now receive as interest on their investment, which demonstrates conclusively that without these savings, through improved conditions brought about by cooperation, the citrus fruit business would be disastrously unprofitable.

Second among the purposes is insuring the collection of sales. Formerly brokers were accustomed to charge 5 per cent. on sales for guaranteeing the collection and transmission of proceeds. To be sure, not all shippers had their collections guaranteed, but the fact that 5 per cent. would be paid by some shows that the risks of loss through bad debts and the transmission of funds were considerable. Whether the grower insured his sales with his broker or assumed the risks, he was losing heavily, for these additional costs had to be deducted from his gross returns. Under the exchange system, the representatives of the California Fruit Growers Exchange have as one of their duties the collection of sales and the transmission of funds. None but a cash business is transacted. At the conclusion of each sale the agent of the Exchange receives the purchaser's check, deposits it in a bank, and immediately draws a check for the full amount in favor of the California shipper. No additional charge is made for this collection, nor are collections guaranteed, but so successful have the agents been in this part of their work that the losses from all causes, such as bad debts, failures in business, etc., since the discontinuance of the California Fruit Agency in 1904 have been but about $7,688, on a total f. o. b. business of approximately $192,000,000, or a loss of about 1-250 of 1 per cent. on sales.[3] This record of financial management would be highly gratifying in almost any commercial undertaking and is an emphatic contradiction of the belief that farmers have not the ability to organize an efficient business institution.

The third object as stated in the agreement is facilitating the collection of damage claims. Damage claims are entered chiefly against the railroads and car companies and may arise from several causes such as overcharge, rough handling, undue delay, insufficient refrigeration, pilferage or freezing in transit. Under the system of individual shipments there was rarely a thought of entering claims for damages against the carriers and little prospect of collecting those that were entered. The exchange system specifically provides that the prosecution of claims is to be one of its functions. And in order that claims shall be entered whenever damage is sustained, no matter if the amount be so small that an association would not consider it worth while to set the machinery of reparation in motion, the traffic department of the central exchange is empowered to handle all claims, making the expense of their collection a general selling charge against total shipments but crediting the amounts recovered to the associations that have suffered the injury. By means of the system of inspections of the cars en route by agents of the Exchange it is entirely possible that a claim for damages may be well under way before the car has reached its destination, while under the old system the injury would not come to light until the car was unloaded, and then often it was too late to do anything.

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[3] Figures compiled from the annual reports of the general manager of the California Fruit Growers Exchange.

That the exchange system is not hesitant about asserting its rights to redress is evidenced by the fact that as many as 11,600 claims have been presented during one year (1914-1915), and that damages are not demanded without due cause appears from the fact that in some 85 or 90 per cent. of the claims presented damages are awarded and collected. The railroads now realize that remissness on their part when handling an exchange shipment is almost tantamount to an awarded damage claim. Of course the result has been a much improved transportation service. Though claims are handled through the traffic department of the California Fruit Growers Exchange they are initiated by the district exchange in whose name the fruit goes forward. Since the organization of the California Fruit Growers Exchange a certain district exchange has collected on claims almost 50 per cent. more than the total cost of its own operation. For the entire period in which the Exchange has been rendering this service it has accomplished the following results:

CLAIMS COLLECTED BY THE CALIFORNIA FRUIT GROWERS EXCHANGE.[3]

	Number of Claims Paid.	*Amount.*
1904-5	2102	$ 37,529
1905-6	6059	114,776
1906-7	4217	96,021
1907-8	7178	152,344
1908-9	6067	125,461
1909-10	5644	93,200
1910-11	6839	117,057
1911-2	6280	125,706
1912-3	6633	114,655
1913-4	5745	108,428
1914-5	11,599	142,005
1915-6	11,364	111,557

[3] California Fruit Growers Exchange: Annual Reports of the General Manager, 1909-10 to 1914-15.

Thus, much more than $1,000,000 is clearly ascribable to cooperation, for the size of the average claim is only about $20, and an individual would scarcely undertake to sue a railroad for the restitution of such a sum. Because the Exchange has never stopped to consider the amount of the injury when a principle was at stake claims are now settled with despatch and without litigation, for the railroads know that unless an agreement is reached the case will be fought through, and they know that the Exchange has the data for winning most of its cases.

Fourth among the enumerated purposes is the improvement of the product and the package. The product is improved in various ways. First, cultural skill is encouraged by the rivalry of growers to obtain the greatest proportion of their fruit in the higher grades under the pooling system. To assist in this worthy competition the exchange system, in connection with the Fruit Growers Supply Company and the Citrus Protective League, places before its members any significant improvements in orchard methods that may have been made. Effective fumigation and frost protection have come in for considerable attention, and a recent development that is likely to prove of the utmost significance is the discovery that citrus trees vary tremendously in productiveness. Mr. A. D. Shamel, of the United States Department of Agriculture, has made some epoch making studies in which he has proved that variation in yield, texture and regularity of bearing of citrus trees are transmissible through budding. His investigations show that by eliminating unprofitable trees by rebudding to proved stocks the yield to the acre can probably be increased by 50 per cent.[4] These discoveries were at once brought to the attention of members with the result that both the quality and quantity of fruit produced in the future are certain to be improved. Much of the campaign against various forms of fruit pests as well as the putting into effect of methods for their control is ascribable to the cooperative organization of the citrus industry.

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[4] Shamel: "A Study of the Improvement of Citrus Fruits Through Bud Selection," U. S. Department of Agriculture, Bureau of Plant Industry, *Circular No. 77*, 1911; cf., also a letter from A. D. Shamel to G. Harold Powell, December, 1912.

Second, care in handling the fruit is made obligatory on all members, because the reputation of the entire system cannot be jeopardized to humor the shiftlessness of a few individuals. Under the old plan the ordinary grower had no reputation to maintain so he tried to get to market the greatest possible quantity of oranges or lemons at the least possible cost, paying little heed to anything but immediate returns. Thus buyers were constantly swindled by securing fruit that was in poor condition on arrival or which rapidly became unsalable. Of course these sins reacted upon the growers themselves, until the annual losses from decay were estimated around the $1,000,000 mark, and the loss of confidence in California oranges by the trade resulted in low prices and thus, indirectly, in additional losses.

For the purpose of studying these losses from decay the United States Department of Agriculture, beginning in 1903-04, made an elaborate series of investigations, in which it was shown that the causes of decay were not due to certain kinds of soil or climate or location, to different times of picking or to a poor transportation service, but were directly attributable to injuries due to careless methods of handling in field and packing house. Pickers were paid by the box and were allowed to use clippers which scratched large quantities of fruit. Little care was used in transferring fruit from picking bag to box, in loading or in hauling. Each grower supervised his own picking and the associations, not realizing the damage from careless handling, did not try to enforce rules against mechanical injuries. In the packing house, fruit was injured in the washer or brusher, in the drying racks, and in fact all through the various packing processes. Mr. G. Harold Powell, who was in charge of the Government's investigations, soon showed that there was nothing mysterious about decay, that it was simply due to blue mold spores entering mechanically injured fruit. He also showed that a house could have as much or as little decay as it wanted. With careful picking, careful and prompt packing, and shipping under the proper temperature conditions, practically all decay would be eliminated.

When the associations learned that little or no decay developed in sound fruit the response was prompt and general. Pickers and packers were instructed to use care in the various operations and were supervised to see that the instructions were followed. Picking was placed more and more under the control of the house. The packing machinery was simplified, and general improvements in packing and shipping procedure were introduced until now decay in transit is no longer a bugbear. Some associations with the strictest supervision and best packing equipment now go through an entire season with less than 1 per cent. decay, while formerly 10 per cent. decay was not at all unusual. In fact the cooperative organizations go further and are not satisfied merely to have their shipments arrive in good condition. If decay starts soon after unloading, jobbers and retailers will be reluctant to handle the fruit, so the aim of associations is now to put out a product which will remain sound until ample time for consumption is afforded. In meetings of the associations, district exchanges and central exchange the importance of good fruit properly handled is constantly emphasized, and the organization of the industry makes possible the widest utilization of such improvements as those worked out by the

Bureau of Plant Industry. Indeed the chief of the Bureau in his letter of transmissal of Mr. Powell's report says: "Largely as a result of the thorough organization of the industry, and the active cooperative spirit shown by the leading men in it, a prompt and general modification of methods has resulted and is still in progress."[8]

A third way in which the product is improved is by making the grading much more strict. Standardization of fruit and vegetables has always been difficult, but the associations realize that business stability for the industry depends on a reliable pack. Therefore, brands are adopted and so far as possible maintained, and jobbers soon learn to know the reliable brands and offer for these higher f. o. b. prices or give them the preference on the auction. That standardization of output may not be confined to individual associations while diversity of standards for grading persists as among the various associations, the California Fruit Growers Exchange has established a field department, one of whose functions is to cooperate with the different associations toward securing uniformity in grading throughout the exchange system. Besides the name of the association, the "Sunkist" trade mark of the California Fruit Growers Exchange appears on the wrappers of the best brands of fruit shipped through the exchange. It would be unjust to an association making rigid requirements for Sunkist fruit if another having lower requirements were allowed to ship under the same brand, so the field department of the Exchange is responsible for standardizing the grades and pack of all associations. Thus both the citrus industry and the fruit trade are beneficially affected by the cooperative system.

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[8] For this whole study of decay and the prompt response of the citrus industry, see Powell: "The Decay of Oranges While in Transit from California," U. S. Department of Agriculture, Bureau of Plant Industry, *Bulletin No. 123*, 1908.

Fourth, the product is improved by reducing the time element in connection with citrus shipments to systematic precision instead of leaving it to chance. By having a comprehensive market information mechanism at their disposal managers of packing houses can time their picking according to the needs of the market, and when a demand is foreseen picking, packing and transportation are timed so as to lay the fruit down at the right instant. Formerly oranges were picked and when it became convenient to the grower were hauled. Then the house often packed them at leisure and either allowed them to lie around or forwarded them and allowed the cars to stand on track several days in some Eastern market. In due time the cars of unattractive fruit were sold to dissatisfied buyers. Now picking and hauling are synchronous, packing is done with despatch, expedited service is demanded of the carriers and the trade is furnished with fresh, reliable goods. So long as distribution was individual it had to be fortuitous; now the time element in marketing takes a coordinate place with growing and packing toward supplying the market with a fresh, sound, desirable product.

Fifth, cooperation can control the problem of frozen and immature fruit shipments where the individual is helpless. Mr. Powell well states the case:

> Unregulated competition between shippers has unfortunately defeated every effort to control food questions of this nature, because the average grower and shipper will violate the fundamental principles of sound business in order to compete with his neighbor whenever he thinks he will receive a higher temporary return, no matter what the effect may be on the future of his own prices or on the industry as a whole.[6]

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[6] California Fruit Growers Exchange: Annual Report of the General Manager, 1913-14.

Frozen fruit used to be a constant source of annoyance and loss. Shippers often forwarded fruit which they had every reason to believe had been frosted, and the trade was getting to distrust the California product. However, the difficulty in eliminating frozen stock was almost insurmountable, for until recently there was no method of knowing whether an orange was injured or not except by cutting it. To throw out a man's entire crop because 25 per cent. of it had been frosted was such heroic treatment that some associations or growers would ship a partially damaged crop, to the great injury of the rest of the industry. Against such practices the exchange system took a firm stand. It demanded that only good fruit should be shipped, and if damaged fruit did by any chance get into the pack the injured party must receive prompt and full restitution. The problem is not now so serious, for, in 1913, Mr. Frank Chase of Riverside devised a water separator for frozen oranges. This invention was not patented but was presented to the whole citrus industry and will form a lasting tribute to Mr. Chase's public spiritedness.

Immature fruit formed a separate problem. There has always been a strong inducement to ship to the favorable holiday market, but sometimes the fruit was picked quite green and was artificially colored. In this manner consumers were deceived into buying sour fruit. Consequently the reputation of California oranges for sweetness was rapidly falling. The Tulare region was the worst sinner in shipping immature fruit, and affairs got so serious that the United States Board of Food and Drug Inspection had to intervene. By food inspection decision number 133, issued in March, 1911, the Board decided that green oranges that had been artificially colored by sweating were adulterated under the meaning of the Food and Drugs Act. This ruling put an end to shipping unlabelled sweated fruit which was unfit for food, but it did not stop the shipping of sour fruit as long as no sweating was done or if the boxes were labelled "Color of fruit accelerated by sweating." So other remedies were required. Finally the United States Department of Agriculture decided that sweated oranges are fit for food when the ratio of soluble solids in the juice to the citric acid is not greater than eight to one. This is known locally as the eight to one standard, and in putting it into effect the exchange system took a leading part, even in some respects making its own requirements more rigid than the Government's.

The season of 1914-15 was the first in which growers agreed to ship no fruit that did not come up to the eight to one standard, and the results on the market of taking such a stand were highly gratifying. The steadying effect of the exchange system upon individual selfishness was forcefully demonstrated by the manner in which the California Fruit Growers Exchange management jolted back into line one recalcitrant association which attempted to disregard the regulations as to quality.[7] It therefore should be evident from this general account that the exchange system has markedly improved the product in the past and is likely to continue in the same policy.

As to the package not so much can be said. The chief improvement along this line has been the reduction of costs. However, substantial enough advance has been made to place the pack of the members of the California Fruit Growers Exchange at the very front of the fruit industry with reference to the attractiveness and uniformity of its output. New, machine made and machine covered boxes are packed with the utmost precision. Each fruit is wrapped in tissue, curtains are often added to the highest grades, and the lithographic work on the labels is the finest obtainable. The best test of the truth of these remarks is an actual comparison of the citrus boxes bearing "California Fruit Growers Exchange" on the side with the boxes of Florida or Italian houses. After such a comparison there will be little doubt as to which will appeal most strongly to the trade. In fact, it is a common observation that were it not for California's attractive pack and her marvellous selling organization her oranges could not compete with those of other sections.

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[7] Compare for a fuller discussion of the problem of immature fruit, Towt: "Picking Oranges Under the New Government Regulations," University of California, *Journal of Agriculture*, March, 1915, pp. 219-220; also Coit: "Citrus Fruits," pp. 282-289.

Another object set forth in the agreement is "to increase the consumption of citrus fruit by developing new markets and to aid in supplying all the people with good fruit at a reasonable price." Furthermore, expenses are permitted to be incurred for "proper and judicious advertising." The exchange system has adopted four general policies for enlarging the demand for citrus fruits. First, a campaign of national advertising is a recognized part of the year's business, and its cost is assessed equally upon all boxes shipped, along with the selling charges.

Before proceeding to the methods employed the question should be answered, Why is any advertising at all necessary? For the answer we must turn to the statistics of citrus production. From 1894-95, the year before the Southern California Fruit Exchange began operations, to 1913-14 shipments of citrus fruits from California increased more than 580 per cent. while the population of the United States increased by only some 56 or 57 per cent. In addition, shipments from Florida and other places have grown almost as rapidly. And this rapid expansion shows no signs of abating. According to figures prepared in 1915 by the field department of the California Fruit Growers Exchange, some 85,000 acres of citrus fruits are yet to come into bearing in California.[8] These plantings will in a few years increase the output of Washington navel oranges by almost one-half, and will double the crop of Valencia oranges and lemons. Under such circumstances the question of how to make the markets expand at the same rate as production is a grave one indeed. The general economic proposition that the demand for products at a remunerative price governs the quantity that will be furnished does not apply without qualification to the conduct of the citrus industry.

At the time these new plantings were made there was undoubtedly a prospect of making profits either through the production of fruit or the production of land values; often, unfortunately, only the latter. But some seven or eight years must elapse before citrus trees come into full bearing, and in that interval the situation may easily change so that under the new conditions there would not be the slightest inducement for expanding production. Indeed the acreage already planted may not be yielding any interest on the investment at all, yet the capital put into these new plantings cannot be shifted, and production is going to increase as the trees mature, even though the demand is not adequate to absorb smaller supplies at prices that afford a net income to the grower. Moreover, this enlarged production is likely to be permanent, for after $1,000 has been expended to bring each acre into bearing the grove is not going to be abandoned, though the fruit does not return the actual money outlay for its production. Any hope of not losing the capital value of the grove depends on giving it thorough care, therefore costs are about the same whether the grove yields a profit or a deficit. The annual cost of maintenance is extremely high.

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[8] California Fruit Growers Exchange: Report of the Field Department, April 9, 1915.

It has been only too common to plant groves that never have been and never can be commercial successes. Cheap land is bought and trees are put out in unfavorable locations, and all this with the practical certainty that the property can be sold at a profit. For an orange or lemon tree will look thrifty for a few years in almost any section of southern or central California. So credulous buyers are induced to invest, and they only become disillusioned when the trees ought to bear paying crops but do not.

However, transfers of property are so frequent that the selling value of a grove does not rapidly become equilibrated to its income value. By the time one newcomer begins to be sceptical about his purchase there is a new contingent of "greenhorns" to whom he can sell, and the first man by that time knows enough to select a suitable location, or more probably he decides that orange growing is not his calling. Thus property values of unremunerative groves are maintained at a fictitious level. Notoriously bad groves have been known to sell three times in the same year, each time at an advance, when veteran orchardists agreed that they could never be profitable.* For present purposes, the point is that these uneconomic groves do nevertheless produce some fruit and that the supplies from these speculative orchards depress prices for groves that were planted for legitimate commercial purposes.

Finally, of course, if the stream of "suckers" ever becomes desiccated these counterfeit groves will decline markedly in price or will be abandoned altogether. This thought was in mind when in Chapter I the statement was made that elaborate frost fighting apparatus is not likely to be a permanent feature of the citrus industry. There is sufficient land in California which does not require a special costly protective service amply to supply the demand for citrus fruits.

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* Perhaps these remarks afford a clue to the often heard statement that citrus growing in general is unprofitable. Many groves have been planted with complete assurance that they could never be profitable. They were planted to sell, not to bear fruit. That the percentage of such counterfeit groves is considerable is indubitable, but how large it is impossible to say. On the other hand, some groves have been continuously and abundantly profitable, and this fact has bolstered up property values for the whole industry.

From this review of the vast increase in the production of citrus fruits, of how it comes about and how it is going to continue for some time at least, it should be apparent that finding a market for these augmented supplies has been and is a difficult matter. Since it is the chief duty of the California Fruit Growers Exchange to furnish a market for the fruit of its members it had to devise some means of enlarging the market. As already noted, one of these methods is through advertising. The advertising campaign until recently was directed from the Chicago office of the Exchange. The advertising department devotes its attention to telling the public of the beneficial effects of using oranges and lemons and to showing how these fruits may be used in new and attractive ways.

To gain any benefit from advertising for itself as distinguished from the industry in general the publicity campaign must be focussed on its own output. The Exchange has accomplished this by adopting two general brands, "Sunkist" and "Red Ball," and by directing attention to them. In its advertising the Exchange fully recognizes that any permanent results must be based on the quality of the advertised article, and it emphasizes the reliability of its fruit. Moreover, it makes good this guarantee of reliability. Therefore jobbers, retailers and buyers learn that any fruit in the "Sunkist" wrapper can be accepted with entire confidence, and this brand comes to command a premium on the market.

It should be distinctly understood that the California Fruit Growers Exchange and not the local associations owns the Sunkist and Red Ball brands. The central exchange, while owning no fruit, allows member associations to add the Sunkist or Red Ball trademark to the wrappers in which fruit that comes up to a specified standard is packed. For seeing to it that associations live up to the grading requirements, the field department of the central exchange is responsible. The privilege of using the Sunkist brand is another inducement to growers and associations to improve the quality of their fruit so as to have as large a percentage as possible of their total shipments admitted to the advertised brands. For the expense of advertising is assessed as a flat rate against all boxes sold, hence houses with poor fruit receive less benefit than their more efficient competitors. During recent years the Exchange has spent annually some $200,000 in advertising, but this only amounts, when distributed, to one and one-half or two cents a box.

A second method employed for increasing the consumption of citrus fruits is opening up new markets. There are numerous towns and villages that are potential consumers of citrus fruits, but they cannot absorb carload lots. Under the old methods the demand of the smaller places was not supplied, for the California shipper was compelled to send his cars to a very limited number of the larger markets where there would be the most assurance of disposing of his commodity. Under the exchange system small consignments are furnished to the trade of any town as the demand occurs, the half car, or whatever amount is required, being supplied through the nearest agent of the exchange. At present 2,500 car lot jobbers, who employ 7,500 travelling salesmen, buy the fruit from the growers' agents, divide the cars and reship wherever a sale can be made to 300,000 retailers.[10] By this aggressive, organized policy possibilities for placing a few boxes of fruit in some obscure village are detected and exploited while formerly no individual shipper could possibly have the means of learning the wants of the smaller places. Now, no retailer, however isolated he may be, need have any difficulty in securing fruit in small quantities as the demands of his patrons occur. As the total consumptive power of these less than car lot markets is enormous, the problem of finding a market for the increasing citrus crop has in large part been solved by being able to turn this potential demand to account through the exchange system of organized marketing.

Third, the Exchange definitely undertakes to work with the jobbers and retailers instead of against them. Producers of fruits and vegetables, when they have become dissatisfied with the operations of middlemen, have customarily sought a remedy in so-called "direct selling." Reasons have been given in Chapter I why plans for direct selling on a large scale must prove more or less abortive. Instead of recognizing that jobbers and retailers perform useful functions that the public demands, these direct sellers do not see the reasonableness of simply asking whether these functions cannot be performed more economically. But the jobber and the retailer cannot be ignored. Somebody has to receive fruit and vegetables, pay for them, store them until wanted, take them to places where consumers have access to them and blanket the credit for those who serve the consumers. All this the jobber does. Then somebody must display these products where consumers are wont to congregate, must keep them until sold (assuming the risk of deterioration), must serve the customers, deliver the articles and often extend credit to the buyer. These things the retailer does.

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[10] California Fruit Growers Exchange: Report of the General Manager, 1914-15.

That each of these series of functions can be carried on more cheaply when many products are handled than when all the machinery has to be supported by one commodity is obvious. But the question arises: Have jobbers and retailers always worked out the most efficient and least expensive methods for conducting their operations? With great business acumen the Exchange turns its attention to this question instead of trying to eliminate the middlemen. Even though there has been considerable ill advised agitation among the members to adopt the direct selling chimera, the Exchange has calmly pursued its sound policy of confining its efforts to enabling the jobbers and retailers to reduce their costs and risk and thus handle citrus fruits on a narrower margin. Exchange advertising accelerates the turnover of its brands, thereby reducing the risk of deterioration. Jobbers are furnished with powerful selling arguments in the shape of attractive, reliable fruit. Retailers are helped to increase their sales by furnishing them with window display material, by supplying them with citrus arguments, and by showing them how to arrange their fruit in a manner that will please customers.[11] This cooperation of the Exchange with the secondary distributors is an innovation in the field of fruit and produce marketing. Such a procedure would be utterly inconceivable for an unorganized industry.

Fourth, the season for marketing as well as the territory is materially extended. Although it is true that the great bulk of the crop is moved from December to June inclusive, California oranges and lemons may nevertheless be found upon the market at any season. Instead of a periodic luxury citrus fruits have become a staple article of food during the entire year. This result has been accomplished largely by the continual emphasis which the exchange system had laid on crops of good fruit with permanent keeping qualities. In all of these efforts to increase consumption the exchange has been working along sound economic principles. It realizes that a large and steady consumption is impossible unless good fruit is offered to the purchaser; it further realizes that the most benefit will come to the industry through large sales at moderate prices, and does not deceive itself with the illusory hope of permanently large sales at unreasonable prices. It is aware that every reduction of cost means an expansion of consumption, so it not only tries to perfect its own methods of growing, packing and marketing, but tries also to help jobbers and retailers reduce their costs.

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[11] California Fruit Growers Exchange: Report of the General Manager, 1914-15; cf. also Reprint, the California Fruit Growers Exchange, by G. Harold Powell.

CHAPTER X

BENEFITS OF COOPERATION FOR PRODUCERS SEEKING A MARKET

That the exchange system has fulfilled its purpose of aiding to supply all the markets with citrus fruits is evident, but has it accomplished its purpose of furnishing these fruits at a reasonable price? Unfortunately, it is impossible to answer this question categorically. No comparable figures are available which show the retail prices of oranges and lemons for a series of years, and none of any value can be computed. Retail prices quoted in the papers are meaningless unless the quality of the fruit quoted is known, and there is no way of gaining this information. All that can be done is to present the prices that the exchange has received for its shipments, f. o. b., California.

PRICES, A BOX, RECEIVED BY THE CALIFORNIA FRUIT GROWERS EXCHANGE FOR CITRUS FRUITS, F. O. B., CALIFORNIA, 1904-05 TO 1915-16.[1]

	Average a box.
1904-5	$1.37
1905-6	2.11
1906-7	2.00
1907-8	1.77
1908-9	1.60
1909-10	1.96
1910-11	1.91
1911-12	1.84
1912-13	2.75
1913-14	1.71
1914-15	1.64
1915-16	2.29

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[1] Figures computed from the Annual Reports of the General Manager of the California Fruit Growers Exchange.

These figures give a simple average for the twelve years of $1.91 a box and a weighted average of $1.89. In general prices have responded roughly to the size of the crop to be marketed, showing that demand and not cost has been the governing factor. Particularly striking was the price situation in the season of the famous frost, 1912-13, when actual shipments were only 37.7 per cent. of the estimated shipments and prices rose about 50 per cent. above the average. However, citrus fruit prices for California are so interrelated with the supplies of other fruits and vegetables, especially apples and Florida oranges, that it is practically impossible to segregate the demand for California oranges and lemons and then proceed to correlate prices with land values, costs of production and transportation, quantity of output, etc. If anything at all can be inferred from the f. o. b. prices it is that they have shown a slight tendency to fall as the industry has expanded. Even if consumers have to pay as much for each orange as formerly, they unquestionably obtain higher quality, more reliable fruit; and this is tantamount to a reduction in price. But the best reason for concluding that retail prices of citrus fruits have fallen is the fact that rapidly increasing quantities of fruit have been absorbed at an almost constant f. o. b. price. These constant or slightly declining f. o. b. prices, moreover, have been in the face of a rapid upward movement of general prices and a particularly marked rise in prices of agricultural products. Besides, the costs of transportation, refrigeration and primary marketing have declined during the period in question, and decay has been minimized, so stationary f. o. b. prices imply reduced costs to jobbers. Therefore, unless jobbers and retailers are retaining a larger percentage of the consumer's dollar than was formerly the case the public is now able to obtain more citrus fruits for a given expenditure of money.

Jobbers and retailers, however, are now handling a much larger volume of citrus fruits, the markets are much more steady, the fruit more reliable, and risks greatly diminished, so it is probable that these distributors are working on narrower margins than formerly. The opinions of those in a position to know are in support of this statement, though they admit little direct proof can be advanced. Hence, even if no usable data for retail prices are obtainable, we may be reasonably certain that prices to consumers have fallen materially, though by how much it is impossible to say. The exchange system, while trying to reduce distributive costs, is, of course, striving to maintain or increase f. o. b. prices, and the fact that f. o. b. prices have been almost constant in the face of the enormous increase in output is the best commentary on the business efficiency of properly organized cooperation.

The foregoing account of the marked success in marketing which the citrus growers have achieved through cooperation obviously calls for a description of the marketing services which have made possible this success. The facilities through which the growers sell their own fruit are furnished by the California Fruit Growers Exchange; and we must not lose sight of the distinction between selling fruit and furnishing the machinery through which others sell fruit. To quote from a letter from Mr. Powell:

> The point of view that you should get very clearly in mind is the fact that the California Fruit Growers Exchange does not buy or sell the fruit of the growers. It merely provides the facilities through which the growers market their own product, but it is not in itself a selling agency.[3]

The central exchange has absolutely no cars of fruit to sell, but it does put representatives in all of the chief markets of the country who are ready to act as agents for associations and district exchanges which do have fruit to sell. Failure to make this discrimination has been responsible for the very prevalent notion of a citrus fruit trust in California.

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[3] Letter to the writer, dated November 11, 1912.

The clearest concept of how the marketing mechanism of the California Fruit Growers Exchange actually operates may be had by considering separately the organization and duties of the Eastern representatives and the operations of the Los Angeles office. At present the territory of the United States and Canada is divided into six grand divisions, each in charge of a division manager. These divisions center at Boston, New York, Chicago, Minneapolis, Fort Worth and Seattle. Then the Exchange maintains agencies in seventy-seven of the principal markets, each agency reporting daily to the proper district manager. The duties of the agents are to secure orders for fruit, to sell fruit under the orders of the district exchanges and associations, to supervise exchange sales on the auction, to collect and transmit proceeds, to develop new customers and new markets, to cooperate with jobbers and retailers and to secure accurate and comprehensive information as to the condition of the market. All of the agents are bonded and are on salary rather than on a commission basis. They do nothing except attend to the interest of the associated exchange growers.

This latter point is important; in fact, it is largely responsible for the admirable efficiency of the exchange system. By appointing salaried agents whose sole occupation is selling citrus fruits the exchange system develops an esprit de corps that is impossible under ordinary marketing methods. What particular interest does the commission man have in his clients? He sells all kinds of products for all kinds of people, and his welfare depends only on his commissions. He is not going to put forth special efforts to sell the peaches of one district rather than the pears of another, for he handles both. But the Exchange agent handles nothing but citrus fruits; he can talk oranges without having to consider how his remarks will react on a consignment of apples from some other client. He is on salary, the welfare of the growers is his welfare, and his reputation and advancement hinge exclusively on his ability to sell citrus fruits. There has been some desultory talk in California to the effect that great savings in marketing could be made if the citrus growers and deciduous growers and vegetable growers would combine and let the same agents handle all kinds of California products.

Such a policy seems subversive of all the marketing efficiency that the citrus growers have so painfully developed. Is it conceivable that a salaried agent could please two sets of producers with competing crops? If the Valencia market happened to be high while the deciduous market was low, as occurred in the summer of 1915, how could an agent escape the accusation of favoring the citrus growers? This combination of producers might be feasible if the agents worked on commission, but the commission system has proved itself a miserable failure in working out a scientific system of food distribution. Marketing efficiency demands singleness of interest on the part of the agent; in other words, that the agent be given some real incentive and then that he be held strictly accountable for satisfactory service. That the method of exclusive salaried agents promotes efficient salesmanship is evidenced by the fact that Exchange shipments have increased some 1600 per cent. in the past twenty years.

All of the Exchange agents keep in close touch with their respective division managers, reporting daily all their own sales and so far as possible keeping informed about the movement of cars belonging to non-exchange shippers. The marketing operations and the information collected by the agents are classified and unified each day at the division headquarters, and reports of everything that has happened, together with the outlook, are wired daily to the Los Angeles office. For handling its elaborate information service the Exchange has its own cipher code, and its expense for telegrams runs into thousands of dollars a month.

The other part of the marketing system which is located chiefly outside of California is the traffic department. This department, with headquarters in Los Angeles, maintains a staff of inspectors along the through railroad lines and through these inspectors watches every car of fruit from the original shipping point to the final destination. The department assists in the routing of cars so as to allow a shipper to lay down his commodity in a given market in the very shortest time, and it also handles diversions. Its inspectors see to it that cars are not delayed by sidetracking, that the ventilation or icing is done by the carriers according to specifications, and that shifted loads are rearranged. Fruit that shows signs of decay is also noted by the inspectors. Like the agents, the inspectors report daily to the Los Angeles office, showing, besides the condition of the fruit, the day and hour of arrival and departure of every car. Hence the exact location of each car is always known by those interested.

Since the traffic department has specific and complete data from its own agents, it knows the fact as soon as a car has been mishandled in any manner. Claims for damages against the carriers are a part of the department's duties, and the marked success which it has achieved in collecting claims is attributable to this elaborate system of inspections. The railroads now realize that the only way of escaping the payment of damages is to render a service that the vigilant traffic department cannot criticize. Such an organization as the Exchange traffic department maintains would obviously be impossible were it not for the immense volume of fruit handled. As it is, the cost is merely nominal while the benefits are among the most clearly marked which the cooperative method of marketing has over other systems.

Every day the Los Angeles office receives the reports from agents and inspectors all over the country. The reports begin to come in during the early morning, and those of special significance that require immediate action may be communicated to the interested associations or district exchange managers the same day. Ordinarily, however, these various reports are classified as they arrive, and are tabulated in a bulletin which is mimeographed and sent out from Los Angeles on the early morning paper trains. Thus the manager of each association and district exchange finds on his desk every morning a complete account of the citrus situation in the whole of the United States and Canada. He is told how many cars were sold the day before and what prices they commanded; he is told the number of cars on switch and rolling and also the location and condition of the moving cars.

The system employed at the central office is to have a separate pigeonhole for history cards of each brand shipped by each association, the cards being grouped according to the district exchanges. In the office of each district exchange, also, similar history cards are filed for each brand of the several affiliated associations. Each car shipped has its own card which sets forth every item of interest pertaining to it, such as the date of shipment, the car number, the number which the Exchange gives it, the number of boxes in the car, the varieties and sizes, whether the car is ventilated, iced or pre-cooled, to what city it is billed and by what routes. Every morning the history of the car during the previous day is available, and this information is immediately transferred to that car's special card. The sales managers of the California Fruit Growers Exchange can know at a glance anything they wish about any car of the entire exchange system. And at the busy season the exchange has rolling or on track toward 2,000 cars a day. Only the history cards for the cars of his member associations are kept by the district exchange manager, though the information for all the cars of the system is available in the bulletins, and a manager who wants to know the whereabouts or condition or prices of cars of competing managers has only to take the little extra time necessary to find this data in the bulletins.

The Exchange bulletin appears as a series of statements and, taken as a whole, is quite a complex affair. One statement gives all the exchange shipments from California for the preceding day, including all the points that have been mentioned as appearing on the history cards. Another statement gives all of the telegrams which came through the central exchange during the preceding day. For it must be remembered that the California Fruit Growers Exchange as such has no fruit to sell, and questions about the acceptance or rejection of prices, the consummation of sales and the conditions of markets are of interest only to the associations and district exchanges that do have fruit to sell. But agents of the California Fruit Growers Exchange must act for all shippers, hence agents are not allowed to communicate directly with associations or district exchanges, but must send all their messages through the central exchange. Then these messages are the common property of all exchange members. In this manner agents are effectually precluded from showing favoritism to any shipper, a thing which might easily happen, and one certain to be charged, if agents were allowed to deal directly with associations or district exchanges. These telegrams tell of offers, the condition of cars, diversions that have been made; and they ask for instructions on various matters. They also set forth the demands of the various markets, as to quantities, sizes, and varieties. A third statement presents a tabulation of all the orange sales of the previous day, together with the prices and pertinent remarks, such as the amount of decay.

Auction markets are maintained at Boston, New York, Philadelphia, Baltimore, Pittsburgh, Cleveland, Cincinnati, St. Louis and New Orleans, and sales at these places, which amount to about one-third of the total sales, are listed separately from those in the markets of the private agents. Another statement gives this same information in regard to lemons. A fifth sheet gives a bird's-eye view of all the cars of the whole system that are rolling or on track, and another document presents the summaries for the whole citrus industry of California, including both exchange and non-exchange shipments for the preceding day, the total cars that the exchange and others have shipped during the whole season, and how these totals compare with totals for the same day during previous years. In addition to the daily bulletin, the Exchange prepares weekly and monthly bulletins which summarize those items of information which will aid an association or district exchange manager in intelligently regulating his shipments.

This market information service, so extraordinary among agricultural industries, means the difference between haphazard and rational distribution, for each association and district exchange manager has both a comprehensive and detailed view not only of his own shipments but of all exchange shipments, and knows the conditions and demands not merely in the markets to which he has shipped but in all. With this extensive information before him the manager takes a sweeping survey of the whole field, and he is enabled to maintain a correct perspective because of his comprehensive view. He is able to detect all the places in the country that might use a car of fruit to advantage, and through his right of diversion he can order a car that he may have rolling to be diverted and the demand supplied. Thus an exchange member has often taken advantage of some favorable opening before outside competitors, without this extensive market reporting service, are even aware that one has occurred.

"Competitive cooperation" has been most responsible for the success and vitality of the California cooperative system. It cannot be too often emphasized that the California Fruit Growers Exchange makes no sales on its own account, nor does it even direct sales. Sales are primarily the function of the managers of the district exchanges, more or less in consultation with the association managers. All of these managers are continually in active competition with one another. Each has the same information before him at the same time, each has the same facilities for marketing, each has the whole of the United States and Canada and parts of Europe at his field of operations, each is trying to obtain the highest possible price for his product. Therefore, assuming the equality of the fruit each district manager has to offer, the relative marketing success of the district is dependent upon the business acumen of the manager. He may bill a car to a certain point to be sold by the agent there at a specified price, or he may decide to try his fortunes in one of the auction markets. However, while the car is en route, if a more favorable opportunity arises for placing it elsewhere he quickly orders it to be diverted and sent to reap the benefit of the especially favorable opportunity. But he must remember that every other manager is

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watching for exactly the same chance and he must be positive that he can reach the particular market with his car before any other manager can reach it, or his expected advantage will not materialize. The skill of the successful manager consists chiefly in his ability to forecast the conditions of the various markets and to start his fruit forward so that it will arrive at the times and in the places most favorable for satisfactory prices.

At auction points sales are made by the auction company, and there is no chance for selling strategy by the district manager. When he has ordered a car to be thrown on the auction there is nothing to do but receive what it brings, and the agent of the California Fruit Growers Exchange makes no sales, but simply transmits market information and attends to collections. In private markets agents make the sales, but they can do nothing except on the orders of the shippers. A district manager may order an agent to sell a certain car at not less than a specified price, to sell it for what it will bring, or to obtain offers on the car but not to sell until receiving word that some offer is satisfactory. If no satisfactory bid is made the manager may order the agent to hold the car a few days and see if an acceptable price can be obtained, or he may order the car to be diverted to another market where the conditions appear to be more favorable.

The third important method of selling is on f. o. b. order. There are many jobbers in the East who are unwilling to buy any fruit that happens to be on the market but desire to obtain certain brands of certain associations that they have found especially reliable. So these jobbers go to the agents of the California Fruit Growers Exchange and offer various f. o. b. prices for a designated quantity of specified sizes to be delivered at an agreed time. These f. o. b. orders are transmitted through the Exchange mechanism, and then the association manager fills them or not as he sees fit. Of course the f. o. b. prices offered are largely influenced by current delivered prices, so on a rising market f. o. b. orders are not likely to return as much money to the shipper as if he had forwarded his car to be sold delivered, while on a falling market or when the fruit is not exhibiting good shipping qualities, f. o. b. orders are eagerly sought. Some regular customers are usually desired by all associations as a kind of stabilizer, so that some shipments can be made even in the face of adverse marketing conditions. These customers are ordinarily taken care of, though their orders may sometimes not be very attractive. There is a vast difference in the marketing policy pursued by the various managers. Some believe that the largest possible proportion of sales on order is best, some prefer to sell principally in the agents' markets, some like to entrust their fortunes to the auctions.

From the foregoing account the reader might conclude that the district manager is practically supreme in the sale of carloads. Such a conclusion would be erroneous. It is true that many associations delegate to the district manager control over sales, but many others do not, or do so only in part. All offers, outside of auctions, may have to be referred to the association manager for his approval, or the association manager may empower the district manager to sell specified cars at his discretion. There are so many reasons why the association manager should and so many why he should not try to control sales that no categorical answer can be given to this much mooted question. It is the old problem of the greatest advantage of one unit of an industry versus the greatest advantage of the industry as a whole. With certain reservations, however, the evidence seems to point toward a relatively large authority on the part of the district manager.

It is the duty of the district manager to advise his associations about the most advantageous times and places to ship, and about the varieties and sizes in demand; also to emphasize the necessity of regular and prolonged distribution as the only basis of scientific marketing. He must show the association managers that undue delay in shipments leads only to such a disastrous slump as occurred at the close of the 1908-09 season. Yet in every fruit year there are periods which average much higher than others, and naturally each association manager wants to serve his growers by having his own shipments heavy in the strong markets and light in the weak markets. Nevertheless, yielding to this temptation leads to the old time speculative, chaotic shipments in place of the present system of stabilized shipments on a merchandizing basis.

Though the district exchanges do and should exercise a directive influence over the associations, the California Fruit Growers Exchange, neither through its manager and its agents nor in any other manner attempts to control shipments or prices. The central exchange and its representatives do their full duty when they carry out the orders of the shippers efficiently and furnish the information that makes it possible for the orders to be rational. If all of the shippers should forward their whole output on a given day to the agent, say, at Chicago with orders to sell for what he could get for the cars, he could do nothing but comply, though undoubtedly his daily reports on the marketing outlook at Chicago would be gloomy. However, it is to avoid such contingencies as the one suggested that the market reporting service through agents and inspectors has been developed. Each manager knows the whereabouts of every exchange car and to what market it is billed; hence so far as the exchange itself is concerned, distribution may be almost completely regularized.

But the so-called independent shipper has little scientific control over his marketing. He may decide to ship a car to a certain market, but he does not know how many other shippers may decide the same day to bill cars to the same market. Neither can he keep in very close touch with his car while it is rolling, or handle diversions very skillfully. Almost literally he sends his product out into the world with the naive hope that it will be treated with forbearance and consideration.

Within the exchange system there is absolutely no attempt to stifle competition, divide marketing territory or gain other advantages through underhand methods. All of the fruit grown by the members must be sold, and the sole purpose of the entire cooperative system is simply to distribute it in such a manner that it will bring the most money to the growers. But marketing policy is controlled not by one central body, but by seventeen district exchanges, 117 local associations and fourteen contract shippers, who represent 8,000 growers. Every local and every district manager is trying to build up the reputation of his own organization, and is trying to secure his own advantage in all markets, although by so doing he may be involving some fellow manager in difficulty or loss. Prices are not fixed in any manner except by the demands of the market. Each car sells on its own merits, and there is no attempt to secure a uniform price for all brands of the same grade from different houses.

The price is a resultant of the quantity of fruit on any particular market and the attractiveness of that fruit. At one time poor fruit may sell for more than good fruit does at another, but at any specified time on a given market cars command prices according to quality. Thus superiority is encouraged and inferiority is penalized, for shippers whose output is known to be of high quality and good keeping characteristics are certain to receive the preference over their less competent or less fortunately located competitors. In providing the marketing facilities and handling the problems that concern the business as a whole there is highly organized and effective cooperation within the citrus industry, but in the distribution and selling of the crop there is unrestricted freedom of competition. That is the reason the exchange has been described as a system of competitive cooperation.

This competitive cooperation keeps the whole exchange system in a vigorous and healthy condition. Each grower is striving to surpass his fellows as to quantity and quality of fruit; each association manager is trying to organize his picking and packing facilities to the best advantage and so to distribute his shipments that they will yield the highest returns; each district exchange manager is working to make a better marketing record than that shown by any other manager; the management of the California Fruit Growers Exchange and its various departments, inspectors and agents are always bending their energies toward furnishing a more efficient marketing medium than that available to any non-exchange shippers.

To throw into relief the whole system of cooperative marketing as developed in the citrus industry, let us follow a car of fruit from grove to jobber when it is handled in the typical way. (Almost any of the operations might be performed in a different manner.) The process is somewhat as follows: The association manager, through attending the weekly meetings of the California Fruit Growers Exchange, through conferences with the district exchange manager, and through his own observations of the course of the markets, becomes convinced that his association should ship a certain percentage of its estimated crop during a specified time. So at the meeting of his directors he recommends that a pool of a certain size be declared for that time. After deliberation the directors accept or modify his plan, and declare, say, an April pool of 15 per cent. Then the association manager informs each grower that the picking gang will be on hand at a designated time to pick 15 per cent. of his fruit. The grower distributes the picking boxes and hauls his fruit to the packing house as it is picked. Here it is brushed, graded, weighed, packed, pre-cooled and loaded on the car which has been ordered and placed by the manager of the district exchange.

At this point the direct responsibility for the car is shifted from the association to the district manager. The latter bills the car in the name of the district exchange to the agent of the California Fruit Growers Exchange at, for example, Chicago. Each day the inspectors along the line apprise the district manager, through the bulletin of the central exchange, of the whereabouts and condition of the car. The manager is also getting daily market reports, and as the car nears its destination he finds that the Chicago market is highly unfavorable. He also learns that the condition of the car is such that it needs to be pushed into immediate consumption. So he orders the agent at Chicago to divert it only as far as to the agent at Detroit where the market appears to be stronger, though the market at Providence is even higher, and if the fruit had shown little decay it would have been ordered there. He instructs the agent at Detroit to sell it at not less than a certain price and if this much is not offered to report the best bid and await further directions. If the acceptable price is forthcoming the agent makes the sale and reports the fact through the central Los Angeles office. If no satisfactory offer occurs the manager either lowers his price until the car will be taken, or he rediverts it to yet another market where the same process is repeated.

In all of these selling negotiations the district manager is in more or less close consultation with the manager of the association which owns the car. When the sale is consummated, the agent immediately collects the proceeds and forwards the entire amount directly to the district exchange. The district exchange retains a fixed sum a box to cover its own expenses and those of the California Fruit Growers Exchange and forwards the rest to the association, and at the close of the pool the growers receive their due shares according to the manner already described.

From the nature of its business, dealing as it does in commodities of interstate commerce and having relations with transportation companies of all kinds, the exchange system is constantly confronted with technical legal questions. For handling these the contract provides for the creation of a legal department. It is the duty of this department to see that the exchange conforms to all national and state statutes concerning interstate commerce, relations to labor, taxation, and similar matters. The department also handles trademark infringements and stands prepared to render legal advice to any association or district exchange. As much of the work of this department is carried on in connection with the Citrus Protective League, further comment will be deferred until that organization is described.

It is not particularly difficult to construct an elaborate selling mechanism. Indeed the chief defect of our present system of food distribution is that it is too elaborate. From the foregoing account of the selling organization of the California Fruit Growers Exchange one might wonder whether any simplification has in reality been effected through cooperation and whether the profits of the industry are not largely dissipated in supporting a top-heavy and expensive marketing service. "How much does it cost" is always a pertinent question, and if the California cooperative system cannot make a satisfactory showing in this regard it must stand condemned. The old line packers and shippers charged about 35 cents a box for marketing and guaranteeing collections. For the same service, and in addition for the incalculable benefit from the information that the old line shippers could not possibly obtain, the claims they could not possibly collect, and the advertising they could not possibly carry on, the costs of the central exchange to its members have been:

Total Cost per Packed Box for Conducting the California Fruit Growers Exchange, 1904-05 to 1915-16.[8]

1904-5	$0.045
1905-6	.068
1906-7	.052
1907-8	.054
1908-9	.053
1909-10	.061
1910-11	.065
1911-12	.075
1912-13	.073
1913-14	.057
1914-15	.062
1915-16	.074
Average	.0616

This marketing cost of approximately six cents a box represents some 2.5 per cent. on gross sales. To obtain the total cost of marketing, the expenses of the district exchange must be added. As these amount to slightly less than one cent a packed box, the total cost of selling California citrus fruits through the exchange system is about seven cents a box, or somewhat less than 3 per cent. on gross sales. Such a showing is extremely commendable when it is remembered that 10 per cent. on gross sales is no unusual selling cost for agricultural products.

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[8] Figures compiled from the Annual Reports of the General Manager of the California Fruit Growers Exchange.

Another criterion of success is permanent popularity. Since withdrawal from the exchange system is comparatively easy and involves no great expense, satisfaction among the members with regard to the results of cooperation is the only possible explanation of a constant or increasing membership. Orange growers can easily ascertain how members of the exchange have fared, and non-members would certainly have no reason for joining unless it appeared that they could receive more benefits within the organization than they had been receiving through other marketing media. How attractive, therefore, has the exchange system of cooperative selling appeared to growers of citrus fruits, considered as a whole?

GROWTH OF THE CALIFORNIA FRUIT GROWERS EXCHANGE, 1904-5 TO 1915-16.[4]

	Boxes shipped by Exchange.	*F. o. b. returns.*	*Per cent. of total California crop shipped by Exchange.*
1904-5	5,189,000	$ 7,124,000	47
1905-6	4,706,000	9,936,000	47
1906-7	6,150,000	12,269,000	55
1907-8	6,629,000	11,754,000	56
1908-9	8,711,000	13,959,000	59
1909-10	7,579,000	14,832,000	59
1910-11	10,843,000	20,708,000	61
1911-12	9,191,000	16,891,000	61
1912-13	4,900,000	13,500,000	61.5
1913-14	11,262,000	19,247,000	62
1914-15	11,890,000	19,574,000	62.5
1915-16	12,102,000	27,703,000	67

Such a record of continuous and undramatic growth is the strongest evidence that those in the best position to judge as to the merits of this particular system of cooperation believe in it and support it.

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[4] Figures compiled from the Annual Reports of the General Manager of the California Fruit Growers Exchange.

It is evident, therefore, that the exchange system has accomplished the purposes for which it was organized. Marketing expenses all along the line have been reduced, distribution has been equalized, and consumption of citrus fruit enormously expanded. Based on achievements, only one verdict is possible in passing judgment on the exchange system.

CHAPTER XI

AFFILIATED COOPERATIVE ORGANIZATIONS IN THE CITRUS INDUSTRY

The existence of one organization connected with the exchange system is partly adventitious. To pack its enormous output of citrus fruits the exchange required immense quantities of box shooks. These shooks had been furnished by the various lumber companies at thirteen cents a box. But after the San Francisco fire in 1906 lumber was in great demand, and the companies served notice that the price of box materials would be advanced to twenty-one cents. On packing boxes alone this advance represented an increased cost to the exchange of some $800,000 annually. Almost all of the pine box manufacturers were represented by one selling agency to which buyers of shooks were compelled to turn, and consequently prospects of relief for the associations seemed quite remote.

After an attempt to supply their needs through other channels than the pine box agency had met with only indifferent success, various conferences were held for the purpose of devising some escape from exploitation by the lumber manufacturers. Here again the advantages of an organized industry were apparent. Up to the time of the rise in the prices of box shooks each association had purchased its packing supplies without reference to the policies of other associations, whether members or non-members of the exchange system. As soon as trouble arose, however, nothing was more natural than to turn to the central organization as the most likely means of escape from the impending difficulties. The various associations soon became convinced that a purchasing agency, composed of all the associations within the exchange, was the only possible way to break the power of the box combination.

So in 1907 the Fruit Growers Supply Company was organized. The officers and directors of the corporation are the same as those of the California Fruit Growers Exchange, with the reservation that the Supply Company has its own manager. In its capitalization the Supply Company is extraordinary. Instead of selling stocks and bonds, its capital was furnished by an agreement among the associations to deduct three cents from each box shipped for five years, and turn the proceeds over to the new company. Then shares of $10 each were to be issued to the associations in proportion to their contributions. With the capital thus secured, the Supply Company began to render financial aid to small box manufacturers who had not joined the selling agency and who agreed to furnish shooks at thirteen and one-half cents. As soon as this policy was inaugurated the large manufacturers tried to disrupt the new organization by offering boxes at eleven cents, in very much the same manner that packers and shippers attempted to frustrate the early efforts toward cooperation in marketing by offering members more for their fruit than they were likely to get if they shipped through the exchange. In both instances the attempts came to naught, because the growers had had all the experience they cared for with speculative shippers or exploitative box manufacturers.

By 1910 the Supply Company was on a sufficiently firm financial basis to justify broadening its scope of operations. Though independent box factories were furnishing shooks at a reasonable price, there was no assurance that they would not at some time join the selling agency and place the citrus growers in a very embarrassing predicament. So the Supply Company determined to put itself in an independent position. It bought a considerable tract of timber land in northern California and erected a lumber mill capable of supplying about half of the packing box needs of the exchange members. With this means of protecting itself the Supply Company is in a most strategic position for bargaining with shook manufacturers.

Thus far the policy of the Supply Company has been to buy most of its shooks from the regular dealers and only operate its own plant enough to know that in case of emergency everything is in readiness to afford prompt and adequate relief. Under these conditions box manufacturers can charge only what the Supply Company regards as a reasonable price for shooks, else it will increase its plant and care for its needs without reference to the regular dealers. Since there can be but one market price for shooks, the benefits from this action on the part of the Supply Company accrue to all citrus fruit packers as well as exchange members.

Besides packing boxes the Supply Company furnishes its members with other necessary packing materials, such as nails, labels, tissue wraps, strapping, curtains, etc. These things it buys from the trade at much more favorable discounts than individual packing houses could get.

Packing house materials represent only one side of the Supply Company's activities: the other is devoted to obtaining orchard materials for the members of the associations. Growers buy each year large quantities of fertilizers, seed for cover crops, frost protection devices and fumigation supplies, such as sodium cyanide and sulphuric acid. All of these things are obtained through the Supply Company at greatly reduced prices. Members of the associations do not deal directly with the Fruit Growers Supply Company but turn in their orders to their local association managers, who forward the orders to the Supply Company. Payment for orchard materials is also made through the agency of the associations.

It appears from the foregoing that the Supply Company does not solicit business and does not attempt to do a general retail business. It simply acts as the purchasing agent for associations and growers for a limited variety of materials that are used in large quantities. By massing the orders of all exchange members, much better bargains can be made with the trade than if these orders were scattered. Until recently the policy of the Supply Company has been to resell materials to associations and growers at cost plus the actual expense of transacting the business and a sum that would afford a dividend of 6 per cent. on the capital stock. But such a policy was very distasteful to wholesalers and retailers, because they often had to lower their prices to meet the quotations of the Supply Company, and as the latter was operating at cost no profit was left to legitimate dealers. Besides, this plan took away the apparent advantage of dealing through the Supply Company. So the method gradually being adopted is to sell to members at market prices and make a refund at the close of the season of all money saved to members through the advantageous bargaining position of the Supply Company.

An additional advantage of this procedure is that the benefits of cooperation are far more evident to the average grower or association manager when he receives a check for a substantial lump sum and realizes it represents what he has saved through cooperation. His actual savings are as great if he gets his supplies at cost rather than at market price or if he receives his supplies at market price and gets a monthly or quarterly refund, but an annual refund is unquestionably the best method of assuring his enthusiasm for and loyalty to the principle of the cooperative purchase of supplies.

The original authorized capital of the Supply Company was $1,000,000. But the stipulated contributions of the associations which agreed to go into the new venture finally exceeded the authorized capital. As more capital could be profitably employed the capitalization was recently increased to $1,500,000. Of the associations which are members of the exchange system all but seven have joined the Supply Company, and receive its benefits. Also about seven non-exchange shippers have been permitted to take stock. A dividend of 6 per cent. on the capital is provided for, and this money is distributed among the associations according to stock holdings. Within the associations each member is credited on the books of the association with Supply Company stock in proportion to the number of boxes of fruit he has shipped from which a deduction has been made to furnish funds for the Supply Company.

For example, if some grower furnished 5,000 packed boxes, and the assessment for Supply Company stock for that year was three cents a box, that grower would be credited with owning fifteen shares of Supply Company stock and would be paid his regular dividend on that basis. When dividends on stock have been paid, all surplus moneys beyond a small amount usually set aside for contingencies are refunded to the associations in proportion to the business transacted with the company. The refund to the associations on packing house supplies is often credited to general packing expenses, but the refund on orchard materials is now very frequently, and should be, distributed only among members who have patronized the company, and in proportion to the size of their orders. Formerly this refund was distributed among members according to stock ownership.

That the Supply Company is an important element in the citrus growers' cooperative system is evidenced by the fact that in 1914-15 it transacted more than $4,000,000 worth of business for its members. This sum was divided into $2,450,000 for packing house supplies, $840,000 for orchard materials and $770,000 worth of lumber and other goods sold on the open market in connection with the company's lumbering operations. Some 14,500 orders were handled by the company at a cost for operation of sixty-eight and one-half cents on each $100 worth of business, or about two-thirds of 1 per cent. Such economy of operation is one of the most commendable features of this particular organization.

To make more vivid the large business conducted by the Supply Company for associations and growers, a few of the items handled by it in 1914-15 might be listed as follows:[1]

The Fruit Growers Supply Company therefore is an important and successful factor in the cooperative system of the citrus fruit growers. Probably the company's claim that packing house and orchard materials cost the growers $1,000,000 less annually than if it were not in existence is not ill founded.[2]

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[1] Figures from Annual Reports of the Manager of the Fruit Growers Supply Co., 1914-15.

Box shooks	12,054,000 boxes	2190 carloads	
Tissue wraps	2,802,380,000	247 "	(est.)
Nails	16,450 kegs	50 "	
Sodium cyanide	1,750,000 pounds	58 "	
Sulphuric acid	2,870,000 pounds		
Fertilizers	26,200 tons (1913-14)		

[2] A rather highly colored account of the Fruit Growers Supply Co. may be found in the *Country Gentleman*, May 29, 1915, entitled "Buying for Sellers," by Walter V. Woehlke. Ch. IX of Powell's "Cooperation in Agriculture," entitled "Cooperation in the Purchase of Supplies," quite evidently refers to the Fruit Growers Supply Co., though no names are mentioned. This treatment is quite satisfactory. However, the description by the present writer has been written wholly from first hand information.

The investment of the exchange associations in packing houses and equipment amounts to a considerable sum. This property offers an opportunity for an extension of cooperation in the shape of mutual insurance against loss by fire. Consequently, under the general control of the board of directors of the California Fruit Growers Exchange, there has been drawn up a Mutual Indemnity Compact whose provisions about 100 of the associations have accepted. This agreement follows the usual plans for mutual insurance against damage from fire. Subscribers are rated according to the value of the property and the character of the hazard, and in case of loss incurred by any member all of the subscribers, including the one suffering the loss, agree to contribute toward the indemnification of the injured party. The contribution from each member is assessed according to the ratio which that member's insured property bears to the total value of the property insured. Rates at which each member is assessed for losses and for funds to carry on the machinery of the compact vary according to a point system, being proportionately more as the risks are greater, and less as the character of the building and the available fire fighting apparatus warrant. Considerable attention is devoted to the practice of "sweating," and the rules are quite specific as to what may or may not be done. This is proper, for by far the most likely cause of fire is in connection with the sweat room.

Packing houses and machinery may be insured at four-fifths of their value, provided that the total liability under the compact does not exceed $25,000. Regular inspections are carried on under the immediate direction of the cashier's department of the California Fruit Growers Exchange. Since little machinery is necessary for these insurance operations in addition to that already provided for by the California Fruit Growers Exchange, the expenses of administration are small. At present the 100 member associations are carrying approximately $1,500,000 worth of insurance. No losses from fire have occurred for two years, and those supervising the insurance features of the exchange system estimate that members save about half of the money which they would have to pay for insurance in the regular companies.[3]

Another affiliated cooperative organization, but one which is as yet in the formative stage, is the Exchange By-Products Company. In general its organization is similar to that of the Supply Company. Its capital at present is but $100,000, and it has only completed the preliminary arrangements for the erection of a plant at Corona. Though there is nothing that can be said about the achievements of this cooperative enterprise, its prospects are bright. In Italy by-products represent about one-third of the value of citrus exports,[4] while in the United States the by-product field is almost untouched.

Citrus by-products are chiefly composed of the essential oils, citric acid and citrate of lime, the bottled juices and the preserved or candied peel. Essential oils are obtained from citrus fruits by peeling them by mechanical devices, crushing the peel and recovering the oil by centrifugal and mechanical processes. These oils are chiefly found on the market in the form of flavoring extracts of orange or lemon and as perfumery. Such oils are worth somewhat over $1 a pound. Citric acid and citrate of lime are obtained by crushing the peeled lemon in order to extract the juice, by subjecting the juice to various heat processes, adding chalk to obtain citrate of lime and dissolving with sulphuric acid in order to get citric acid. About fifty pounds of acid, worth to the manufacturers fifty cents a pound, can be obtained from one ton of lemons. These products are chiefly used in connection with the manufacture of leather and the printing of cloth. The Citrus Protective League calculates that almost one-third of the Sicilian lemon crop is manufactured into citrate of lime.[8] Incidentally, it is estimated that enough sodium and potassium cyanide can be obtained from the pulp after the juice is extracted to supply the growers' needs for the purposes of fumigation. No comment about the bottled juices is necessary, except to mention that the use of orange juice as a beverage is rapidly increasing. The uses of the candied peel and marmalade are also obvious.

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[3] Letter to the writer from the Cashier of the California Fruit Growers Exchange, dated January 15, 1916.

[4] Citrus Protective League: *Bulletin No. 11*, p. 40.

Ultimately the By-Products Company expects to manufacture all of these commodities, but at first it will devote attention to the essential oils and citric acid. For these products the raw material is lemons. In fact, as yet the uses that can be made of small and off grade oranges are extremely limited. This situation is not serious, as there is at present much more need for an outlet for superfluous lemons. The orange market can be enlarged by a constructive marketing policy, but the lemon market is quite rigid. Comparatively small additional supplies above the normal consumption make prices fall until the lemons will not cover costs.

It is just this situation that the Exchange By-Products Company is organized to meet. When the market is firm all merchantable fruit will be shipped, and only the culls will be turned into by-products. But when market prices become unremunerative the very small and the coarse fruit will not be shipped. Such a policy will tend to improve the market both by reducing the supplies available to dealers and by improving the average quality of the stocks that are offered. Under the old plan, though every shipper knew that at certain times the only way to save the market from demoralization was to reduce shipments, yet no single shipper was likely to send his fruit to the dump for the sake of improving the lemon market, since by his very action he would be excluded from participating in the benefits which he had helped to produce. As long as there was any likelihood of paying anything above freight, packing and selling charges, shippers were going to send forward as many lemons as possible. Undoubtedly this was a short sighted policy, but under the conditions as they formerly existed no other was possible.

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[8] Citrus Protective League: *Bulletin No. 11*, p. 33.

Unless some kind of an agreement could have been worked out by which shippers would reduce their output by a definite percentage when the market was overstocked, gluts were inevitable. Moreover, such an agreement would unquestionably have been illegal. However, as soon as the By-Products Company gets into operation, associations will only market lemons as long as the price is more than enough to counterbalance what can be made by turning the fruit into by-products. For example, in the winter when the demand for lemons is slight, some return can be had on the fruit without shipping it. Thus the company is intended to be a kind of safety valve. It is expected to stabilize the market and prevent those shortages and gluts which are almost equally injurious for growers and for dealers. With an efficient by-products plant available the disastrous season of 1914-15 could not have occurred. This new departure in cooperation should prove interesting, as there are possibilities of wide development. It also should prove most beneficial to the citrus industry.

An important factor in the California cooperative system is the Citrus Protective League. It was the first organization of its kind in the United States; it concerns itself with vital problems which in most agricultural industries are left to chance. The league was organized in 1906 to handle all of the public policy questions which relate to the industry as a whole. Such questions are control over the routing of fruit, transportation and refrigeration chrages, precooling problems, customs tariffs, national and State regulatory legislation, orchard and packing problems; in short, any general questions relating to the upbuilding of the citrus industry fall within the province of the League. Membership is voluntary, and "all growers, organizations of growers, or shippers of citrus fruits are eligible." Expenses are met by assessing each member according to the number of cars of fruit shipped by each during the preceding fruit year, but no single assessment may exceed the rate of twenty-five cents a car.

The business of the league is directed by an executive committee of nine members who are chosen from an administrative committee of thirty members. This latter committee is supposed to represent all of the large citrus interests of the State. Withdrawal from the league is possible at any time, but the fact that shippers representing about 90 per cent. of the citrus fruit volume are members clearly indicates that the citrus industry believes the league to be worth while. The California Fruit Growers Exchange, representing 67 per cent. of the citrus shipments, is a member, as are the Mutual Orange Distributors, who handle about 14 per cent. of the crop and are by far the largest cooperative organization handling citrus fruits, if exception is made of the California Fruit Growers Exchange. In addition, the most important grower-shippers are members. Since there are included as members of the league shippers with all kinds of marketing policies, it is definitely specified in the membership agreement that the league shall conduct its functions "without reference to the various methods of marketing."

If the league were not in existence, of course the only organization that could cope with the more general public aspects of the citrus business would be the California Fruit Growers Exchange. But since advantages in the form of lower freight rates, better accommodations, or similar matters accrued to the entire industry as well as to the members of the exchange, it was admitted that the entire burden of securing improvements could not rightfully be shifted to the exchange alone. To be sure, the small minority of growers and shippers who refuse or neglect to join the league announce by their actions that they are interested in secured benefits rather than in securing benefits. Even in a highly organized industry where cooperation and public-spiritedness are the keynotes, such anachronisms of selfishness are probably inevitable.

In a recent statement the league thus describes its accomplishments:

> The Citrus Protective League, in the eight years that it has been organized, has been the instrument by which the citrus fruit growers of California have been enabled to accomplish certain definite benefits to themselves which it would have been impossible for individual growers or marketing organizations to obtain. The results have been accomplished through the voluntary cooperation of its members who have given their time and experience without charge in order that the industry as a whole might benefit.

It then enumerates as its achievements the reduction in 1907 of the freight rate on oranges from $1.25 to $1.15 a hundred pounds, which saves the industry about $1,000,000 in a normal year; a change in the refrigeration tariff in 1909 which nets to the industry about $50,000 a year; the successful litigation of the lemon rate case by which the carriers were restrained from increasing the freight rate on lemons from $1 to $1.15 a hundred pounds. This case was in constant litigation from 1909 to 1913, when the Supreme Court of the United States rendered a verdict in favor of the lemon industry. This service of the league represents a normal annual gain of $250,000 to the growers. The league also handled the pre-cooling and pre-icing litigation and secured additional significant savings to the shippers of oranges and lemons.

The league was largely responsible for having the tariff on lemons raised by the Payne-Aldrich Act from one cent to one and one-half cents a pound. Probably its activities in 1913 kept lemons from being placed on the free list, and left them with a duty of one-half cent a pound in the Underwood Act. Through the efforts of the league the Federal authorities have specified acceptable standards for the shipment of frosted and immature fruit. In 1909, when the citrus industry was threatened by the infestation of the white fly, the league furnishd funds for its eradication at a time when the State authorities had no funds available. Later, however, the league was reimbursed. In 1911 the league induced the United States Department of Agriculture to undertake a thorough study of the causes of decay in oranges and to establish a laboratory for the experimental study of citrus by-products.

To the league's credit can be placed much of the interest in and application of frost protection devices. Many growers who saved their crops by heating appliances in the frost of 1913 were induced to make the necessary preparations because of the league's propaganda. One of its most significant accomplishments was its important part in inducing the California Legislature to authorize a branch of the University of California, College of Agriculture, for the study of and investigation into citrus problems, such as soil and nutrition problems, insect pests and citrus diseases. A new experiment station has recently been established at Riverside and bids fair to take a leading part in the future upbuilding of the industry.

Besides these public activities, the league publishes frequent bulletins of information to keep its members fully conversant with the latest improvements in citrus technique. It also gathers statistics of the citrus industry in all parts of the world, keeps a citrus reference library, and maintains a bureau of information available to any one interested in the citrus industry. To secure all of these benefits that have been enumerated the members have had to pay but sixty cents a car a year, or one and one-half mills a box. Freight savings alone have amounted to 7.2 cents a box for oranges and 12.6 cents for lemons.*

Probably no one would contend that the achievements mentioned could possibly have taken place without organization. It is difficult to imagine, for example, how an individual farmer would proceed toward securing reduced freight rates or obtaining an agricultural college. On the other hand, is a Dakota farmer likely to know the statistics and conditions of wheat production in Russia? But the citrus grower has definite information about conditions in Italy and in all other countries where citrus fruits are produced. An unorganized industry makes haphazard progress, as some one happens to stumble upon an improvement in methods. But the citrus industry through its complete organization can command the expert services of Federal and State officials to solve problems of whose existence the ordinary grower is hardly aware. Organization is the clue to the rapid changes that are constantly taking place in the citrus industry as contrasted with the placid conservatism of most agricultural enterprises. Ancestor worship and devotion to the archaic are not characteristics of real cooperation. For united and aggressive attacks on common problems are bound to yield definite results, and close association is bound to disseminate these results throughout the whole organization.

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* Data taken from a statement of the Citrus Protective League, dated May 21, 1914.

What power the league can bring to bear on general citrus problems may be thrown into stronger light by tracing briefly the history of the lemon rate case and the pre-cooling case. In 1909, after the tariff on lemons was advanced from one to one and one-half cents a pound, the railroads responded by announcing an advance in freight charges on lemons from $1 to $1.15 a hundred pounds. Citrus fruits from California have long enjoyed a blanket or "postage stamp" rate to all the principal markets east of the Rocky Mountains: that is, the rate to Kansas City and to Boston is identical. So an advance in rates was a serious matter. Therefore the Citrus Protective League in connection with the legal department of the California Fruit Growers Exchange entered a petition, in the name of one of the district exchanges of the exchange system, in the Circuit Court for the Southern District of California asking that the new rate should not be permitted to take effect until the reasonableness of the increase had been submitted to the Interstate Commerce Commission. The injunction was granted in November, 1909, and at a hearing the commission decided in June, 1910, that the rate should not exceed $1 a hundred pounds. Thereupon, in October, 1910, the carriers filed a joint bill of complaint in the Circuit Court for the First District of Kansas, alleging that the commission's order was null and void on the grounds both that the commission had exceeded its legal authority and that the rate of $1 was confiscatory. An injunction against putting the commission's order into operation was granted, and the case was transferred to the newly established United States Commerce Court.

Another extensive hearing was held, this time before the Commerce Court, with the result that in October, 1911, the commission's order was declared ultra vires, and therefore null and void. But the court also said that it was without prejudice to a reopening and reconsideration of the entire question by the Interstate Commerce Commission. Accordingly this was done, and again thousands of pages of testimony were taken, and again the commission declared, in December, 1911, that the rate of $1.15 for lemons was unreasonable and that the rate should not exceed $1. Once more the carriers applied to the Commerce Court for relief, but after a fourth hearing the Commission's order was sustained by the court in February, 1913. The railroads then appealed the case to the Supreme Court of the United States, which rendered a decision favorable to the growers in November, 1913.[7]

This lemon rate case is probably the most striking example on record of the power that can be wielded by an organized agricultural industry, against outside encroachments. For it should be noted that the citrus growers entered their complaint against practically all of the railroads of the United States, and especially against the Southern Pacific, Santa Fe and Salt Lake systems, roads well able to protect their own interests. Each party backed its contentions by enormous amounts of evidence. No individual growers or even small organizations could have borne the financial pressure of the litigation, or secured the evidence which finally resulted in success. For an organized industry, representing almost $200,000,000 worth of property, such contests become practicable. Moreover, adverse interests are not likely to impose on such an industry and thus provoke a test of strength.

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[7] The citations for the legal stages in connection with the Lemon Rate Case, in the order in which they are mentioned in the text, are: Arlington Heights Fruit Exchange v. Southern Pacific Co., 175 Fed. 141; Arlington Heights v. Southern Pacific, 19 I. C. C. 148; Atchison, Topeka & Santa Fe v. Interstate Commerce Commission, 182 Fed. 189; A. T. & S. F. v. I. C. C., 190 Fed. 591, 1 Com. Ct. 83; Arlington Heights v. Southern Pacific, 22 I. C. C. 149; A. T. & S. F. v. U. S., 203 Fed. 56; A. T. & S. F. v. U. S., 231 U. S. 736.

But little less tortuous has been the history of the pre-cooling and pre-icing case. In order to escape part of the heavy refrigeration charges ($62.50 a car to Chicago, $75 to New York) of the carriers and also to improve the refrigeration methods the shippers began, about 1908, the practice of pre-cooling. That is, the fruit was thoroughly chilled before it was loaded on the cars. Also the bunkers were filled with ice by the shippers and the carriers were ordered not to re-ice in transit, while formerly the initial icing and the necessary re-icings had been furnished by the car companies.[a] Hence the railroads performed no service for the shippers except to furnish the cars and haul the freight. These two items, so the shippers contended, were part of the transportation service covered by the regular freight tariffs, and no charge whatever for refrigeration services was justifiable, as the shippers had furnished all of the refrigeration themselves. But the railroads insisted on charging an arbitrary rate of $30 per car on shipments that had been pre-cooled and pre-iced by the shippers. It was from this charge of $30 a car that the shippers sought relief through the courts.

As soon as the Interstate Commerce Commission ordered the railroads not to charge more than $7.50 a car on pre-cooled and pre-iced shipments, the carriers revoked the right of the shippers to pre-cool and pre-ice. This case also was twice before the commission, twice before the Commerce Court, and it was finally decided, in January, 1914, by the Supreme Court of the United States both that the shippers had the right to pre-cool and pre-ice and that the carriers should not charge more than $7.50 a car for refrigeration on such shipments.

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[a] All of the refrigeration business of the Southern Pacific and Salt Lake Companies is handled by the California Fruit Express Co.; that of the Santa Fe system, by the Santa Fe Refrigerator Despatch Co. Both of these companies are completely controlled by the railroads.

Thus the exchange system controls a Supply Company to provide packing house and orchard materials for its members, an Indemnity Compact to insure its associations' packing houses against fire, a By-Products Company to relieve the market of unattractive or unwanted fruit, and it is by far the most important member of the Citrus Protective League which is vigilantly alert to see that the citrus growers' interests are maintained and where possible extended. In short, cooperative activity characterizes almost every branch of the citrus business except the actual production of fruit, and even there cooperative picking crews, cooperative irrigation systems, cooperative fumigating outfits and cooperative frost protection associations are common. The growers have amply demonstrated that by working together, instead of against one another, a highly specialized industry, thousands of miles from its principal markets, with enormous fixed charges, not only can exist but can prosper.

CHAPTER XII

RELATION OF EXCHANGE SYSTEM TO GENERAL MARKETING PROBLEM

The cooperative activities of the California citrus growers are not vitally important, but the significance of their activities is of far reaching importance. It has been with the purpose of estimating the relation of the California system to the broad problems of food distribution that the earlier chapters have been written. If the system of cooperation worked out by the citrus growers has no wider application than to the citrus industry, it is little more than an industrial curiosity.

From the detailed attention that has been devoted to the structure of the California Fruit Growers Exchange it might be inferred that no other systems of cooperation are in vogue among the citrus growers of California. Such a conclusion would be erroneous. Coit classifies the marketing arrangements as follows:[1]

Sales through the California Fruit Growers Exchange	62 per cent.
Independent association sales	20 "
Sales by independent growers who ship to market	5 "
Miscellaneous sales	13 "

The procedure for the 20 per cent. marketed by the independent cooperative associations is roughly analogous to that described in connection with the exchange system, with the exception that far less elaborate and comprehensive machinery is employed. Also these associations often consign to brokers, a thing that the exchange never does. However, it is almost accurate to say with Mr. Powell that "to be as near like the exchange system as possible is the leading argumentative asset of every important independent association that seeks to build up a larger membership in the citrus industry."

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[1] Coit: "Citrus Fruits," p. 344.

There are a few growers with a large acreage who have packing houses of their own, and are not merely members of associations of growers. Some of these large growers have established reputations with the trade which put them in an exceptional marketing position, and they do not feel the need of associating themselves with other producers for the purpose of solving the marketing problems.

The 13 per cent. listed as miscellaneous sales represents that small group of growers who have as yet been uninfluenced by cooperation. These growers still market through speculative buyers in practically the same manner as before the opening of the cooperative era. They sell by the pound all the fruit they can to buyers and consign the remainder on commission.

So the question naturally arises: If the California Fruit Growers Exchange has achieved such signal success, why do these outside interests refuse to affiliate themselves with it? The answer to this question goes to the heart of the problem of cooperative effort. Why, therefore, did some growers organize cooperative enterprises of their own instead of joining the exchange system? And why do some growers continue to hold aloof from cooperation altogether? Unfortunately for the believers in the principles of cooperation, these questions cannot be lightly brushed aside as irrelevant, and honest answers to them strike at the foundation itself of cooperative endeavor in the field of agricultural industry.

If the exchange system employed monopolistic tactics, if it tried to restrict or discourage the planting of new citrus acreage or limit membership or control shipments, there would be adequate reason on the part of non-members for hesitating to join, but it should be abundantly clear from the foregoing description of the exchange's methods that no such practices are countenanced. Very few growers who understand the system base their objections on this ground, although some more or less interested parties have at times tried to sound the "trust" alarm. Growers know that they are at liberty to join, in fact, that their membership is desired; and they know that they will have a voice in directing the policy of their association according to their relative importance as growers. They also realize that were it not for the stabilizing effect of the exchange on the market they very probably could not produce profitably at all. Many non-members admit that with no exchange the citrus industry would be a puny affair.

Yet they refuse to become members and take their part in maintaining the organization which they acknowledge is indispensable to their welfare. The reason is that the benefits from many of the public policy activities of the exchange and the advantages of a regularized market accrue almost equally to members and non-members. The same dilemma confronts the exchange system that confronts the dominant organization in any industrial field. It realizes that judicious distribution of fruit, extended as long in time and as widely in space as possible, is the only means of selling the constantly and rapidly augmenting citrus crop. No other organization is in a position to take the lead in this rational, scientific marketing program. If the whole industry would fall into line and support these efforts toward regular distribution, the marketing problem would be solved satisfactorily.

This does not imply that citrus fruits could always be sold at a profit, for that depends on the whole economic situation. It does, however, mean that a grower would receive his equitable share of what consumers of citrus fruits generally estimated that such fruits as compared to other commodities were worth to them. Accident and chance and speculation would largely be removed from the business of marketing. Depressed prices in one market and, at the same time, inflated prices in another would become impossible. Prices would fluctuate from month to month during the citrus year according as the sales managers accurately or inaccurately anticipated the demands of the market. If a wrong calculation occurred and too large a percentage of the crop should be forwarded during the first part of the season, prices would obviously be lower during that part and higher during the latter part of the season. Also from year to year prices would vary according to the size of the citrus crop and competing crops and according to the condition of business in general.

The point here urged is simply that fluctuations in price at any given time due to irregular distribution in space could be eliminated. In other words, a satisfactory system of food distribution should widen the meaning of the term market until it corresponds with the financial market, in which the market, where one price governs, is practically synonymous with the entire country. At present, the market for fresh food products is rarely of wider extent than the municipality. Prices in one city have only a remote relation to those in another, and unorganized distribution cannot be other than fortuitous. It is submitted that complete organization combined with an extensive market information service would remedy this situation.

Under the present arrangements, without complete organization in the citrus industry, there are large differences in the price of fruit in different cities and in different seasons of the year. The exchange system has greatly reduced these variations, but they still persist, and are the very factors that are likely to make complete unification of the distributing machinery impossible. At certain times and in certain places especially attractive prices are anticipated, so at such times the independent shippers rush their cars to those places to reap the exceptional rewards. The exchange, through its information service, realizes even more fully than the independent shippers that these opportunities exist, but it also realizes that outside shipments are certain to be on hand and that additional offerings of its own fruit would make the market collapse. If the exchange had the inclination it could ruin these non-cooperating shippers by throwing its own cars in excessive numbers on all the principal markets. For the independent shippers have no choice but to ship to the large markets, as they do not have the machinery for knowing the demands of the smaller cities. But such a policy of aggressive competition would involve a temporary loss for exchange shippers as well as the discomfiture of their competitors, and, since each exchange shipper has absolute control of his own shipments and is guided in his marketing policy only by an intelligent and comprehensive view of general marketing conditions, no shipper is likely to adopt cutthroat tactics.

Thus non-exchange shippers have the advantage of the large markets while the exchange has to go out and work up the smaller markets. Also at the large centres a shortage of fruit is felt much more quickly and raises prices much more abruptly than in the smaller places. Hence, independent shippers are often in a position to reap scarcity profits. In short, non-exchange shippers are in a position to gain most of the advantages of a stabilized and expanded market without contributing toward the work of stabilization or expansion. To the extent that this is true, the exchange member is penalized for his progressiveness. The case is quite analogous to the condition of the non-union workman who gladly accepts the increased wages, the shortened hours, and the improved working conditions that have been fought for and won by the unions but who declines to bear his brunt of the fight.

If taken to task some of these independent shippers would confess that without the steadying effect of the exchange the citrus industry of California could not possibly have reached its present dimensions, and might not have existed at all. If the exchange showed any signs of collapsing they would rush to its support, but meanwhile they are quite content to "ride without paying." But the exchange cannot adopt this irresponsible philosophy. Its very life depends on systematic marketing. With the reversion to spasmodic marketing the exchange itself, because of its enormous shipments, would be the worst sufferer.

The final straw to the exchange member's patience, and the one that is responsible for most desertions from the system, is the fact that the independent shipper with his chaotic methods sometimes obtains higher prices, even after the exchange member has gone to the trouble and expense of building up his elaborate marketing machinery. When non-exchange shipments bring better prices, exchange members at once learn the fact through the citrus market reports of the daily papers, and indeed independent shippers naturally try to make capital out of these successes by bringing them to the attention of both their own and exchange shippers. To be sure, these particularly high prices often do not apply to entire car lot sales, but to a few boxes of exceptionally fine fruit within a car, while exchange sales almost invariably denote the average price a box obtained for the whole car. But the psychological effect of the high quotations is just as disastrous as if these few exceptional sales did have some real significance.

These exceptional sales are always noted and discussed when many sales of independents which average lower than exchange sales are unnoticed. Because of its policy of even and regular distribution, exchange sales are apt to conform more closely to the general average of prices at any specified time, while non-exchange shippers are likely to receive both the highest and the lowest prices.

The important point is that non-exchange shippers often have the advantage of being able to report spectacular prices. And since it seems to be a characteristic of human nature to prefer the chance of securing exceptionally large gains, though incurring the risk also of exceptionally large losses, to more moderate gains and less risk, even when moderate gains can be proved to total more than large gains plus large losses, some people are going to choose speculative instead of merchandising methods of marketing. Co-operative marketing on a large scale is not a spectacle, it is a business. Extraordinary prices could only be obtained by manipulating shipments so as to bring about searcity prices, and the attempt to do this would be the direct antithesis of sound marketing policy. So adventurers and romanticists who want to "take a chance" prefer spasmodic to regular distribution. They see possibilities of large gains here and there and fail to see at what cost to the industry these gains are purchased.

It is the old difficulty between individual advantage and the general welfare that arises. One grower or shipper might profit by chaotic and fluctuating markets but nothing more disastrous for the industry as a whole could be suggested. The very possibility of obtaining these exceptional prices at all depends on the existence of the industry, and the existence of the industry is dependent on stability of marketing methods. As long as ignorance or selfishness or speculative mania cause certain individuals to seek personal advantage at the expense of the general welfare on which also their personal advantage ultimately depends, so long we shall wait in vain for a completely organized system of food distribution. To the present writer, this difficulty appears to be insurmountable. Those with public spirit and foresight have to continue to bear the burden for their irresponsible fellows.

The unquestionably correct assumption that the exchange member's situation is superior to that of his independent competitor is based on two facts: (1) The prices which the exchange receives for its fruit are available to anybody and are a matter of common knowledge, whereas the prices of most independent concerns are not available. Therefore, it is easy to surmise that the independents are not eager for a comparison of results. (2) If the prices which individual growers receive from the non-exchange channels of marketing are entirely satisfactory, why do they continually join the exchange ranks? What possible motive would cause the transfer if the prices which they are receiving should be higher than those of the exchange, since they can easily ascertain the latter before applying for the privileges of membership?

Though some growers do not see fit to adopt the cooperative method of maintaining the citrus market, they are treated with all courtesy by members and associations. Antagonism and animosity could certainly do no good, and courtesy may lead to cooperation. Moreover, in an indirect way non-members are of use in helping to work out the problems of cooperation, for they make necessary loyalty and internal harmony among the members and are a stimulus to never ceasing endeavor toward progressiveness and efficiency on the part of the cooperative organization.

But some growers are not content with mere aloofness. They adopt aggressive tactics, and unstable minds are likely to be influenced by attacks on any organization, no matter how unjustifiable the attacks may be. Here is an example: After explaining how low prices for citrus fruits during 1914-15 were not attributable to the war or the tariff or general business depression, one grower asks:

> Who is to blame? The method of marketing. Who is responsible for the method of marketing? The California Fruit [Growers] Exchange. . . . Mr. Exchange Grower: At present you are standing in the doorway, right in your own light, and you shadow every other man in the business.[2]

The question arises, therefore, whether this elaborate cooperative organization that has been so painfully evolved is likely to be permanent, or whether it is simply an interesting industrial experiment that will certainly succumb as soon as adversity arises and may even fall of its own weight. Cooperation among the citrus growers was not the child of logic and a priori reasoning about a scientific system of marketing but of necessity, and necessity has thus far maintained it. With the extension of cooperation beyond marketing into packing house and orchard supplies, insurance and by-products, and with cooperation the starting point in dealing with the large public policies affecting the industry, the cooperative principle is probably more deeply ingrained in the citrus industry than ever before. Never was the exchange system in a sounder or more flourishing condition than it is today. Those in the best position to know are positive that cooperation has come to stay, because it has "made good"; indeed, that it has done things that the old systems did not and could not do. An excellent summary of the present status of cooperation in the citrus industry is given by Powell:

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[2] MacRae: "Citrus Facts as Viewed by a Grower," in *Riverside Enterprise,* May 20, 1915.

At first, the growers were inexperienced in meeting the attacks of those who were opposed to cooperation among the producers. Powerful financial interests of various kinds were arrayed against them and were organized to oppose them. Vicious attacks were made on the integrity of the officers. The results obtained by the associations were belittled, the grower's association contract was assailed in the courts, and the methods of marketing the fruit were attacked. The most determined efforts were made to show that the growers' organizations were illegally formed. Finally the growers combined with the buyers at one time to market the entire crop, but this incongruous combination of producers and dealers was dissolved at the end of a year and a half.

The history of the citrus industry in California is largely a record of the progress in the cooperative handling and distribution of the crop by the producer and his determination to receive an equitable share of the value of the labor expended in its production. The battle has been won; the cooperative principle is firmly fixed. It is the balance wheel that gives stability to the industry and to the relations that exist between it and the agencies with which it transacts business.

Fewer serious efforts are made now to break down the cooperative principle among the growers. New schemes of fruit marketing are proposed from time to time, the organizations are frequently attacked in the courts under one guise or another, and other insidious movements are started, all having in view the possible splitting open of the cooperative organizations and a return to the methods of marketing which would destroy the systematic distribution and marketing now in operation and reinstate the chaotic speculative methods that were formerly in vogue. The cooperative movement in the citrus industry is the result of a slow, painful evolution, and the grower does not appear to be deceived by these efforts, no matter how ingeniously and artfully they are conceived.[8]

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[8] Powell: "Cooperation in the Handling and Marketing of Fruit," from the Yearbook of the Department of Agriculture, 1910, p. 405.

Admitting that cooperative marketing is on a solid basis in the citrus industry, are there any peculiar circumstances that have contributed to this result? And is cooperation applicable where such conditions do not obtain? The citrus industry of California is unique. It is restricted to an area that, while not small, is yet much smaller in extent than that devoted to most agricultural products; most problems of producing and marketing apply to all the growers alike; there is practically no local market, and almost all fruit must be shipped thousands of miles, thereby necessitating a more elaborate marketing organization than is required for most agricultural commodities. Probably more important still, the citrus growers are an exceptionally intelligent and progressive group. Even under these favoring conditions cooperation was almost literally forced on them, and while cooperative effort has undoubtedly proved a success, it has nevertheless failed to attract a considerable number of growers. With all the conditions favorable, organization has not become complete and universal.

Therefore, when the producing area is widely scattered, or when the product cannot be standardized, or when marketing is mostly local in character, complete organization of the marketing machinery would certainly be much more difficult. But even when a highly integrated system is impossible, local cooperative associations for handling common problems of production or transportation or finance are practicable. Local producers may cooperate for the standardization of their own local product. They may profitably combine, also, for the erection and maintenance of common cold storage facilities. Then these local units could have more or less intimate relations with similar units in other districts, even if a general and comprehensive organization could not be effected.

Whether the cooperation contemplated be local or general, agricultural industries can learn much from the experience and achievements of the citrus growers of California. The problem of food distribution is not completely solved by cooperative marketing, but, allowing for the necessary adjustments according to varying conditions, the California system exhibits many improvements over previous methods and is susceptible of a wide application.

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